



DCS HQR1 DVR DCS HQR4 DVR

User's Manual

Version 2.0.1
2008-05-10

CAUTION!!!

Read this User Manual carefully. There are no user serviceable parts inside. Removing the end plate screws will void your warranty. If your DCS HQR1/HQR4 requires servicing, please contact your authorized distributor or factory.

Do not use the DCS HQR1/HQR4 to power other devices other than a single camera!!

This document is a work in progress and reflects only the version of the DCS HQR1/HQR4 device.

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Introduction

Introduction of DCS HQR1/HQR4

DCS HQR1/HQR4 is a dedicated battery powered Digital Video Recorder designed for portable, mobile Video and Audio Recording applications. The DCS HQR1/HQR4 hardware system uses ARM9 processor and advanced hardware MPEG-4/2 video encoder, PCMCIA interface, charging circuit, vibration/alarm circuit, video capture, IRIS camera interface and MCU designed on board. The MCU is used to process remote control, push buttons, power management, LANC and alarm. PCMCIA can support CF with FAT32 files system. Recorded video on CF card can be replayed on a PC instantly. PCMCIA interface can also be used to connect other peripheral devices for future extension.

The OS of DCS HQR1/HQR4 is Linux. It handles multiple tasks in real time, for example; driver, recording, AV synchronization, file management and external events etc.

The common Compact Flash card is used as a storage medium. The CF card is a solid storage media with the best anti-shock capability available today. It is also low powered and provides fast speed with multiple diversity options. It is very good choice for mobile DVR applications.

DCS HQR1/HQR4 offers two encoding formats, MPEG-2 for DVD and MPEG4 for archive and streaming video.

MPEG-2

MPEG-2 is a standard for generic coding of video and audio. It is widely used in consumer electronics, such as DVD video disc, DVD player, DVB television broadcasting etc. The DCS HQR1/HQR4 can record in MPEG-2 format which can be edited by any video editing software or replayed by DVD player.

MPEG-4

MPEG-4 is the awesome new generation video standard with better video quality and higher compression rate. For exceptional disc space saving, MPEG-4 is capable of creating highly compressed video archives on a regular CD-ROM with almost the same quality of DVD. One popular MPEG-4 format is DivX. It is the only technology that enables streaming of video on the internet possible. Now, many DVD players can play DivX files directly.

Features

- ✧ Battery powered for portable, mobile DVR applications
- ✧ Intelligent and uninterrupted battery and AC power swap in real time
- ✧ Capture Video & Audio live from any composite video output
- ✧ Support MPEG-4/2 video format for longest record time
- ✧ Video Bit Rate : 1M~8Mbps
- ✧ Frame Rate : PAL(25fps), NTSC(30fps)
- ✧ Support PAL/NTSC/SECAM standard
- ✧ Resolution : Full-D1, CIF/SIF (1M Bitrates)
- ✧ Supports Single File & Full Disk Cycle Record Mode
- ✧ Supports ADPCM Audio Format
- ✧ Audio Sampling : 8/16/32/48KHz
- ✧ On-board IR remote controller
- ✧ LANC remote controller support
- ✧ AC adapter or Internal Li-Ion Rechargeable Battery
- ✧ On-board battery charging circuit
- ✧ Offers power for camera & MIC
- ✧ Changeable CF Flash Card to save video
- ✧ Multi-Color LED for status
- ✧ Micro Vibration Motor or Beep status warning
- ✧ Optional OSD and RTC
- ✧ Optional Lap Timer
- ✧ Palm sized
- ✧ Only 160g weight with battery and CF card
- ✧ Video/Audio input
- ✧ Linux OS and upgradeable firmware
- ✧ Support Windows 98/ME/NT/2000/XP/Vista for Playback

Product and Accessories

DCS HQR1/HQR4	1pcs
AC Power Adapter	1pcs
Recharge Li-ion Battery (Internal)	1pcs
Remote Control	1pcs
PCMCIA-CF Adapter	1pcs
IRIS-RCA Jump Cable	1pcs
External Beacon Receiver (Only for Lap Timer Edition)	1pcs
Video Input Cable (Only for 4CH DCS HQR1/HQR4)	2pcs
A/V Output Cable (Only for 4CH DCS HQR1/HQR4)	1pcs

*** Power adapter and battery are for DCS HQR1/HQR4 only and don't use any other power adapter and battery instead in case of damage.**

**** When you connect an AC power adapter to charge the internal Li-Ion battery but don't record, please enable Power-Off option to decrease heat & protect DCS HQR1/HQR4.***

Installation

Preparation

Please read the user's manual carefully before installation. Check the minimum requirements of the system and recommended system configuration.

DCS HQR1/HQR4 Configuration

- ✓ PCMCIA-CF adapter
- ✓ SanDisk Ultra II CF card, 512MB minimum

PC configuration for replay

- ✓ CPU : Pentium III 1G and above
- ✓ RAM : 512MB and above
- ✓ DVD Recorder : DVD±R/RW
- ✓ OS : Windows 2000 (SP4), Windows XP (SP2), Vista
- ✓ HDD : 7200RPM, 10G free space
- ✓ Display : 1024x768 and above, 24/32 bit color depth
- ✓ Graphic Adapter : Support DirectX 9.0c
- ✓ USB : One free USB 2.0 host interface
- ✓ Card Reader : one high speed USB 2.0/1394 card reader
- ✓ PCMCIA : Optional PCMCIA interface

Installation Guide

Before Installation

- 1) Check all accessories and CF card
- 2) Format CF card with FAT32 file system as if it is new
- 3) Check power adapter and battery
- 4) Check whether PC and peripherals match the recommended configuration

Installation

- 1) Make sure power switch is in the 'off' position
- 2) Insert CF card into PCMCIA adapter
- 3) Push PCMCIA adapter with CF card into the PCMCIA slot
- 4) Connect camera properly

Startup

- 1) Connect AC power adapter
- 2) DCS HQR1/HQR4 will start self-diagnostics when power on begins.
- 3) The LED is red in self-diagnostics and will turn yellow on start-up. The LED turns to green once start-up successful.
It takes about 12 seconds to startup
- 4) The LCD displays **Init...** during startup, after startup successful, the LCD will display **DCS HQR1** or **DCS HQR4**
- 5) You will hear a beep one time, once DCS HQR1/HQR4 starts-up
The Vibration Motor will vibrate one time, once when DCS HQR1/HQR4 start-up successfully *
- 6) The battery will be charged automatically when power on and LED turns on red

The battery should be fully charged before first use. The charging LED goes out once the charge has finished.

Please charge the internal Li-Ion battery over-night & until the charging LED goes out. Li-ion rechargeable battery is expendable.

The battery should be replaced after 500 charge cycles. The used battery should be disposed of appropriately.

**** The Beep & Vibration Motor is only one in DCS HQR1/HQR4, The Beep is standard part, Vibration Motor is optional only for special model.***

Safety and Warning

**** Never connect IRIS-Power output to any power adapter. It may be damage the interface and board.***

**** There are no user serviceable parts, please do not open the unit. Doing so can damage the unit and will void your warranty.***

**** Restrict input voltage to range from 9V to 15DC, 12V DC is recommended. Never apply DC voltage beyond this range or AC voltage to the DCS HQR1/HQR4.***

**** Only use AC power adapter supplied with the unit. Do not use third party AC power adapter, it may cause unexpected problems or damage.***

**** Restrict powering devices drawing more than 200mA current for 1CH DCS HQR1/HQR4.***

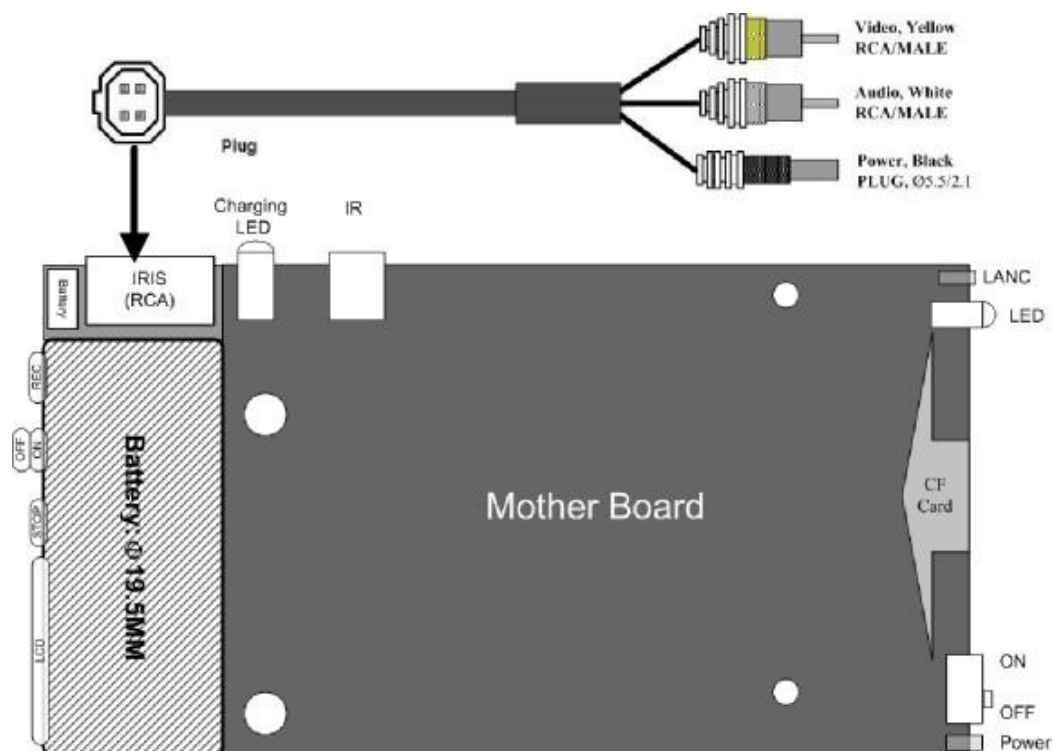
**** Restrict powering devices drawing more than 700mA current for 4CH DCS HQR1/HQR4.***

**** When DCS HQR1/HQR4 is powered by the internal battery, do not connect more than 1 camera.***

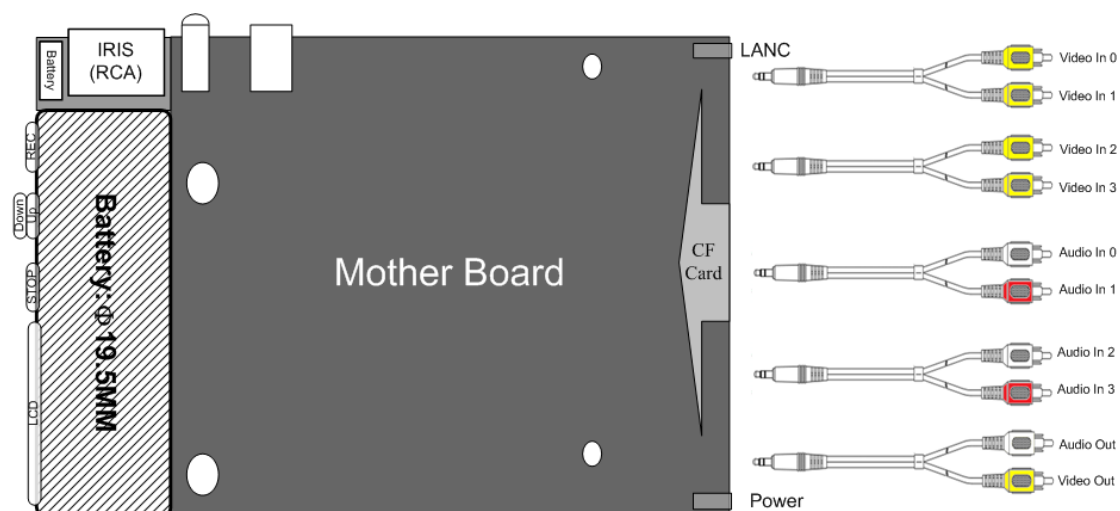
**** Never insert and remove CF card while power is on, this corrupts files!***

Connect Video/Audio signal to DCS HQR1/HQR4

1 Channel DCS HQR1



4 Channel DCS HQR4



Video and Audio Interface

If the DCS HQR1/HQR4 is configured as RCA audio/video interface, the colours correspond to:

Yellow- Video



Audio

Power output

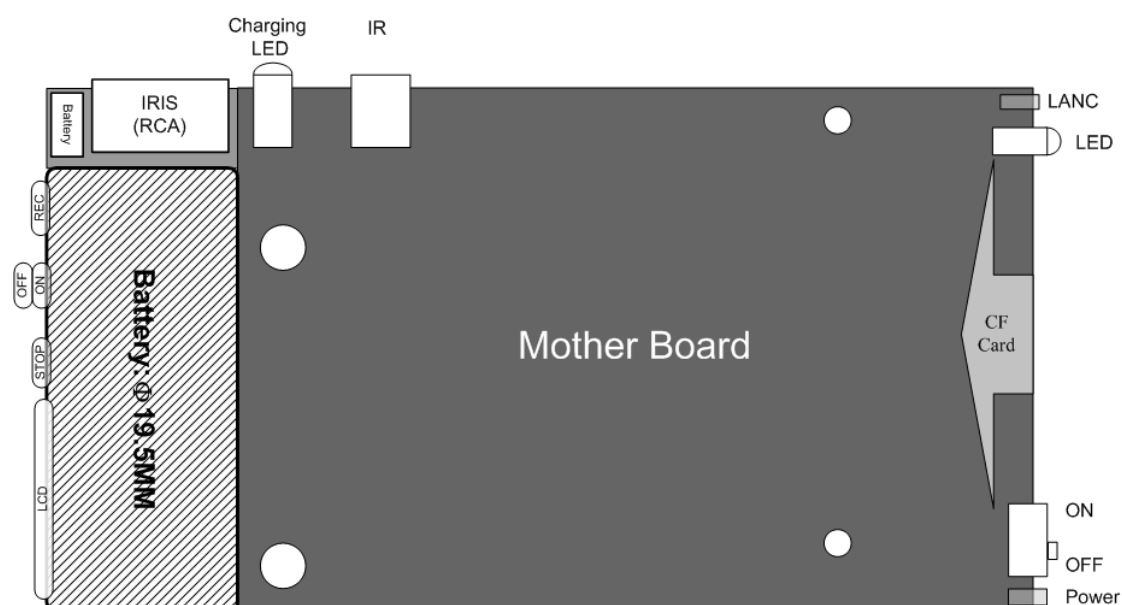
Button/Bullet Camera Interface

Some button cameras can connect to DCS HQR1/HQR4 directly without the jump cable if the interface of button camera conforms to the IRIS interface in Appendix.

Eject CF Card

- 1) Wait until the LED turns green
- 2) Disconnect power adapter & Switch off power from the internal battery
- 3) Eject CF card

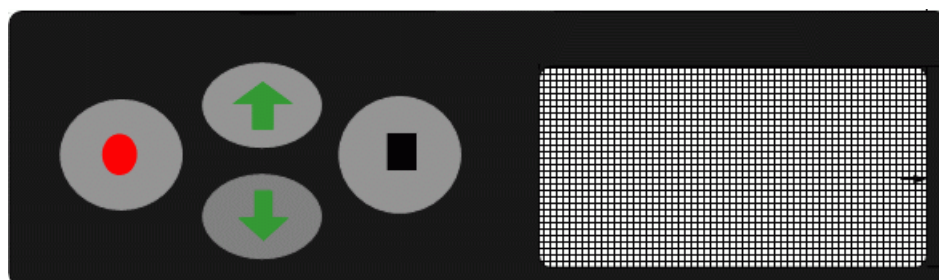
Operation of DCS HQR1/HQR4



Quick Start


No configuration is required to start recording with the DCS HQR1/HQR4.

The operation of the DCS HQR1/HQR4 is quiet simple. There are two push buttons, REC and STOP. An LED is used to indicate the status of operation.



Push Button

RECORD


Press the  (REC) button for at least one second to start recording.

The LED will flash red and you will hear three beeps.

The flash frequency is about 3 times per second. Slower flash frequency means

no video signal is connected.

STOP

Press the  (STOP) button for at least three seconds to stop recording. The LED turns to green & you will hear 2 beeps.

It will take a short while to save buffered data after stopping. The power cannot be turn off until the LED changes to green. Early ejection of the CF card will cause corruption of the video files. Disconnect AC power adapter and switch off battery before eject CF card.

Infrared Remote Control

Infrared remote control is optional for DCS HQR1/HQR4.
Three buttons are defined currently:



Start recording



Stop recording










Keep pressing to make DCS HQR1/HQR4 in Sleep/Wakeup mode

Infrared Remote Control for 4 Channel DCS HQR4

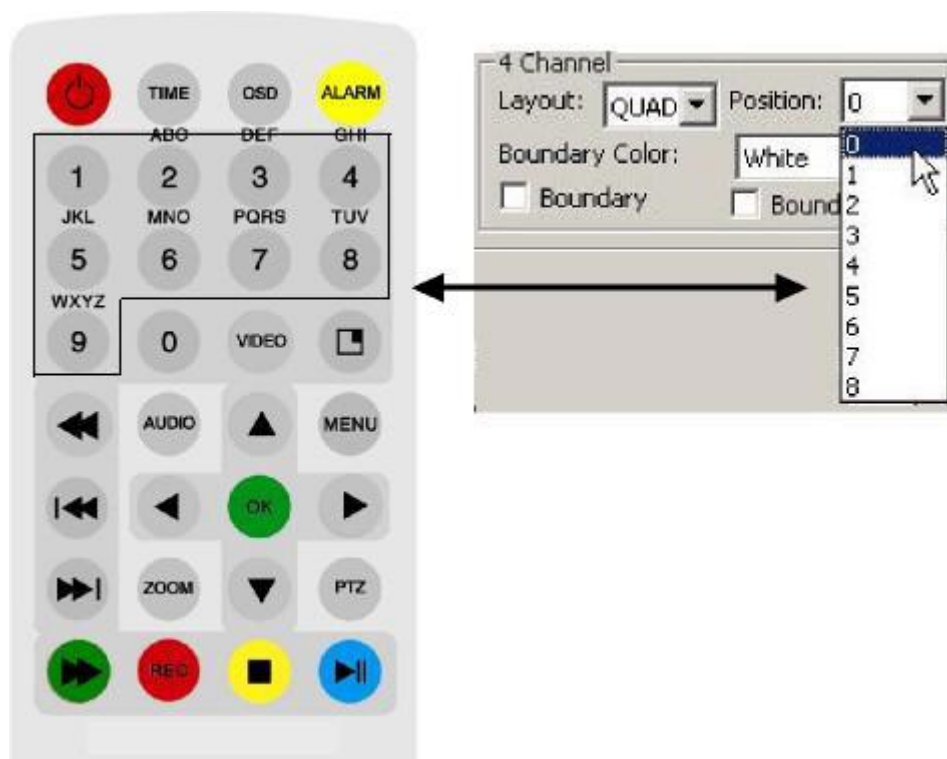
The numeric key on the IR remote controller controls 9 positions of Picture-In-Picture, you can configure it & select any one array method as your default array using the DCS HQR4 Desktop.

You can switch the array method using the numeric key on the IR remote controller directly when you record the video using 4 Channel DCS HQR4. The numeric keys 1~9 relates to the 9 items in the **Position** pull down menu.

Numeric Key on IR remote Controller	Item in Position Menu
	0
	1
	2
	3
	4
	5
	6


8	7
9	8

Table showing numeric key on IR remote controller & Position menu

**NOTE :**

- **Numeric key on the IR remote controller are used for 4 channel DCS HQR4 only.**
- **Numeric key on the IR remote controller are used only when you set Layout to PIP on 4 Channel area.**

LANC Remote Control

The DCS HQR1/HQR4 supports the multi-version LANC Remote Control, please power off DCS HQR1/HQR4 & unplug AC Power adapter, then plug in the LANC remote control into the LANC jack with  logo.

NOTE : SkyTools CamEYE SPORT LANC Remote Control V1.4 & V1.6 are supported by the DCS HQR1/HQR4.

Power on the DCS HQR1/HQR4, after booting is finished, you can control the DCS HQR1/HQR4 start/stop recording using the LANC remote control. You can also power off the DCS HQR1/HQR4 & power on it again using this remote.

After the DCS HQR1/HQR4 starts successfully, the status LED on the LANC

remote control will display green. Press the button on the center of the LANC to start recording, and the status LED on the LANC will flash red & the unit beeps 3 times once started successfully.

Press button again, the DCS HQR1/HQR4 will stop recording, the status LED on the LANC turns to green.

Hold the button on the LANC for approx 3 seconds until the status LED on the LANC flashes red. This will power down the DCS HQR1/HQR4, when the DCS HQR1/HQR4 powers down, the status LED on the LANC turns to yellow.

In power off status, press button on LANC to power up the DCS HQR1/HQR4 again.

NOTE : DO NOT PLUG OR UNPLUG THE LANC REMOTE CONTROL WHEN DCS HQR1/HQR4 POWER ON & AC POWER ADAPTER IS CONNECTED !! YOU MUST POWER DOWN THE DCS HQR1/HQR4, UNPLUG AC POWER ADAPTER, THEN PLUG/UNPLUG THE LANC REMOTE CONTROL.

Wireless Remote Control

Optional for specific applications with an additional module of wireless remote control.

Video Quality

1M: Record video using 1Mbits/s, record video based on CIF/SIF resolution.

EP: Record video using 2Mbits/s.

LP: Record video using 4Mbits/s.

SP: Record video using 6Mbits/s.

HQ: Record video using 8Mbits/s.

The recorded file size is dependent on the complexity of movement objects. The following is the estimated recording time:

1M : 100 min/GB

EP : 60 min/GB

LP : 40 min/GB

SP : 20 min/GB

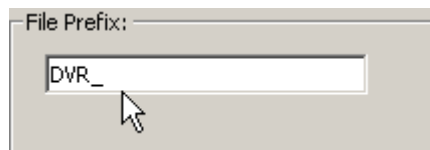
HQ : 15 min/GB

Larger storage cards can yields longer recording time and better picture quality. For example, current capacities of CF card on the market are from 512MB to 16GB. 4GB CF cards can record 4 hours in EP mode.


EP mode is recommended for slower moving or still background scene with some moving objects in front. SP mode is recommended for fast moving background scenes.

Video File Name

Record file name starts with DVR_ by default. The file name will be DVR_xxx.avi. XXX is incremental from 000 to 999. The prefix DVR_ can be modified in DCS HQR Desktop software.



DCS HQR1/HQR4 Status

- ☯ Power up: LED is yellow for less than 1 second.
- ☯ Self diagnostics: LED is red for about 10 seconds.
- ☯ Standby: LED is green. Means it is ready to record.
- ☯ Recording: red LED will flash about 6 times/second.
- ☯ CF full: yellow LED will flash.
- ☯ Battery Low: Recording is stopped automatically. LED flash 4 times and enters sleep mode
- ☯ Sleep: LED is yellow. Only the  (POWER) button can wake it up.
- ☯ No Video: LED will slowly flash red whilst trying to record.

Replay Video

Software

It is simple to replay video recorded on CF card. Media player can play the video files directly within Windows.

DivX Codec or player has to be installed if no related components are installed on PC. You can download DivX decoder from internet & install it. We recommend the use of VLC media player which can be downloaded for free on the internet.

Card Reader

High speed card readers are recommended for read and replay of recorded video. If the card reader is fast, your PC can replay video instantly from the CF card without coping video file to PC hard disk first.

PCMCIA Interface

Most laptops have a PCMCIA interface. CF card with a PCMCIA adapter can be read directly by Laptops with this interface. Copy the video files to PC and then replay the video files because PCMCIA is relatively slower.

Install DCS HQR Desktop

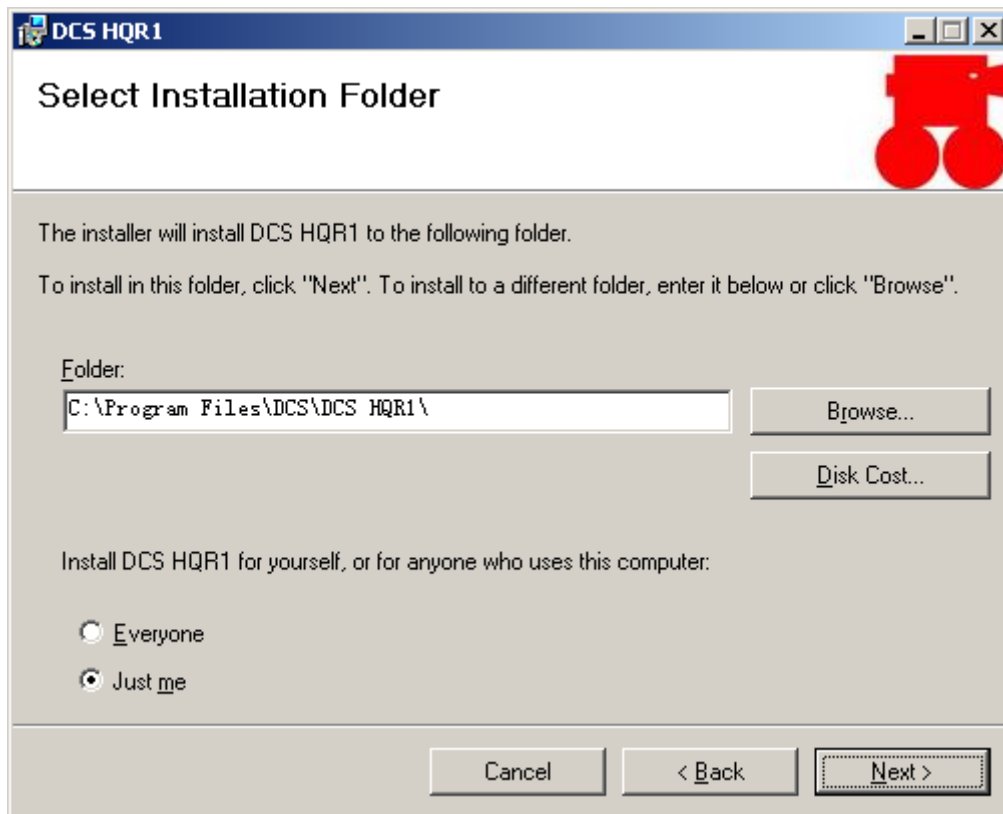
DCS HQR Desktop Installation

Install DCS HQR Desktop before you use the DCS HQR1/HQR4 for the first time. Run **setup.exe** to install DCS HQR Desktop.

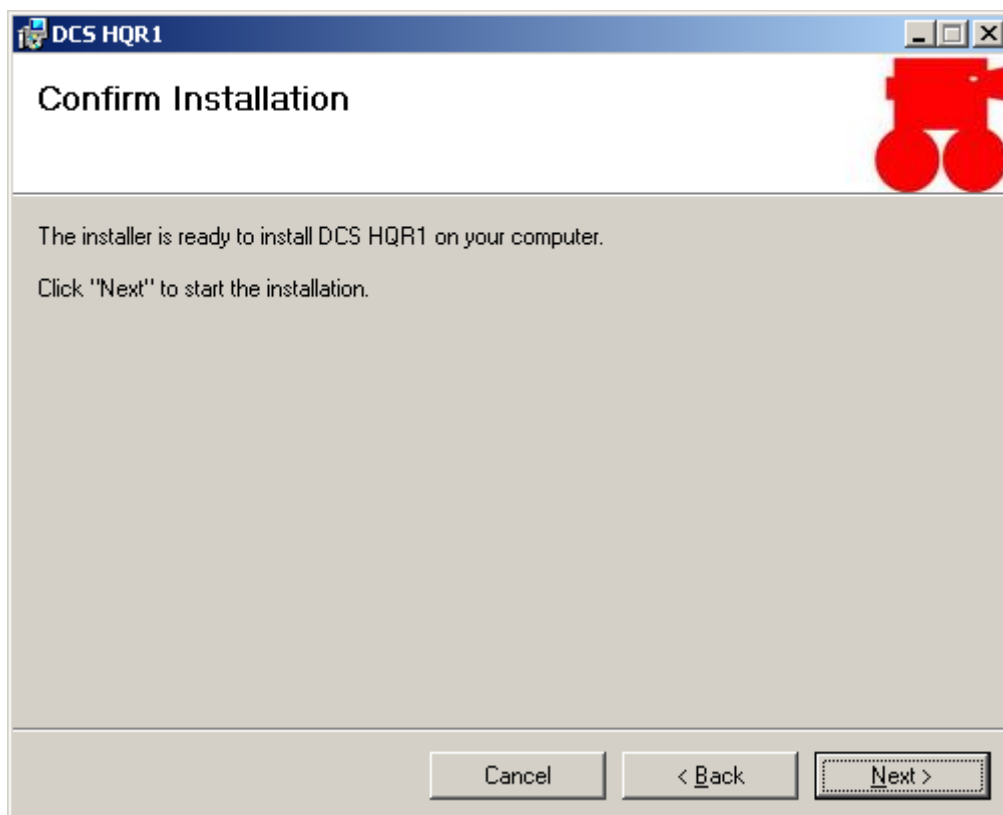


Click **Next >** button to continue installation setup.

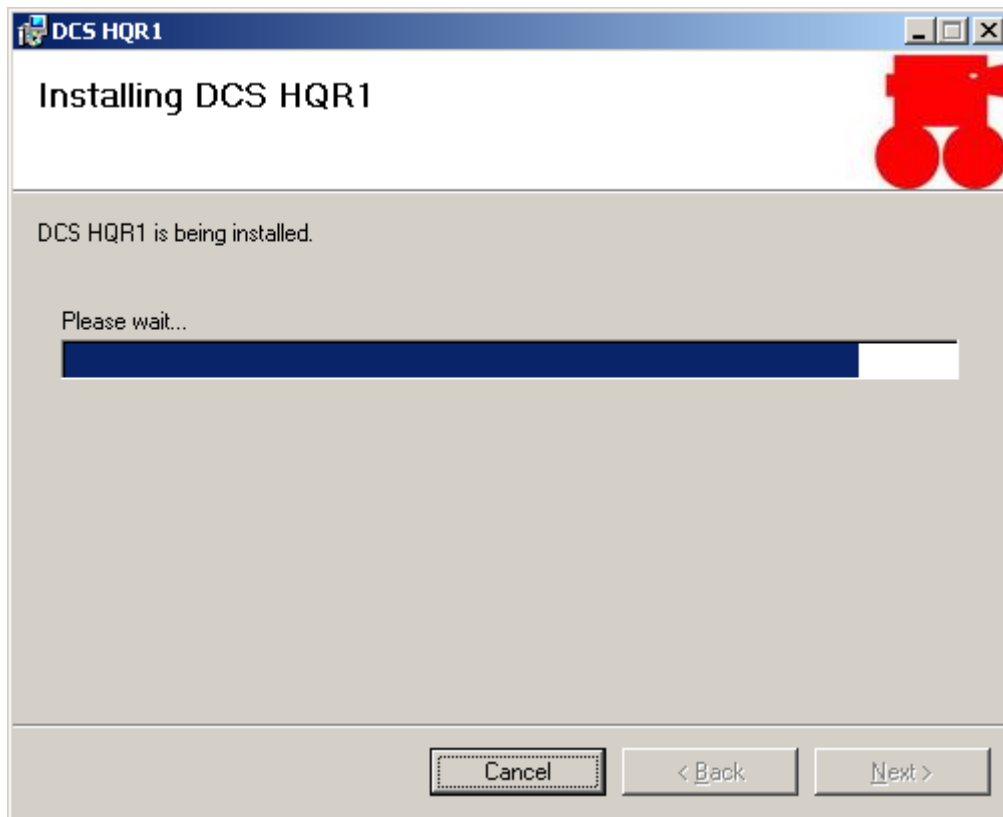
During the installation process, you can select the target folder or use the default folder when software prompts you.



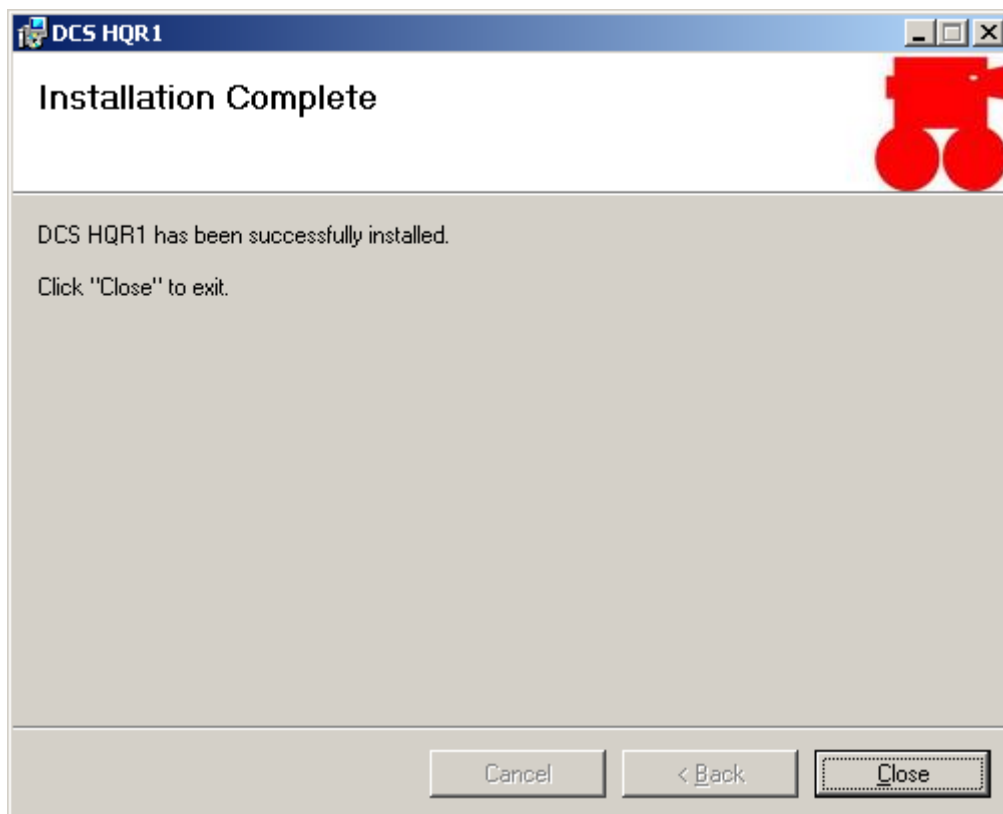
After you select the target folder, Click **Next >** button to confirm it.




Click **Next >** button to start DCS HQR1/HQR4 software install.



Click **Close** button to finish it when installer prompt you the installation is successfully.



After you install the DCS HQR Desktop, the software shortcut  **DCS HQR Desktop** will be generated on the desktop and DCS HQR1/HQR4 program folder.

DirectX 9.0c is required to install and run DCS HQR Desktop.


Configure DCS HQR1/HQR4

The DCS HQR1/HQR4 is initialized as DEVICE.INI under the root directory of the CF card. It must be in the root directory of CF card. The DCS HQR1/HQR4 will use the last time configuration if DEVICE.INI not found during startup.

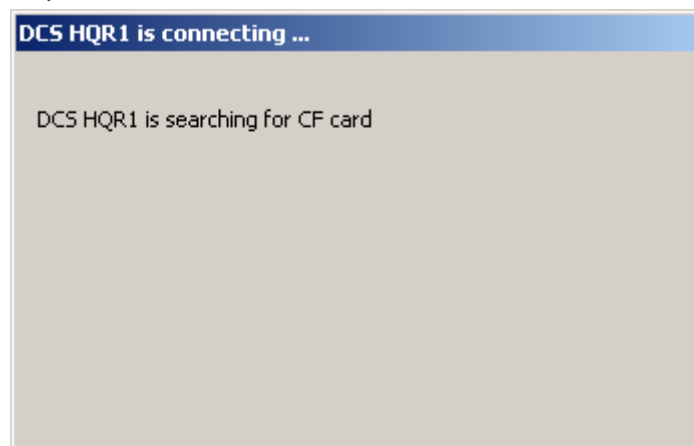
DCS HQR Desktop can configure the video format, average bit rate, audio in, TV system, time stamp, Beacon, convert the recording video etc.

Start-Up DCS HQR Desktop

DCS HQR Desktop will detect CF card that you want to used in DCS HQR1/HQR4, please connect CF card to PC via card reader before you start DCS HQR Desktop.

Connect CF card to PC via card reader in first, then double click  to start-up DCS HQR Desktop.

DCS HQR Desktop will search CF card on PC.

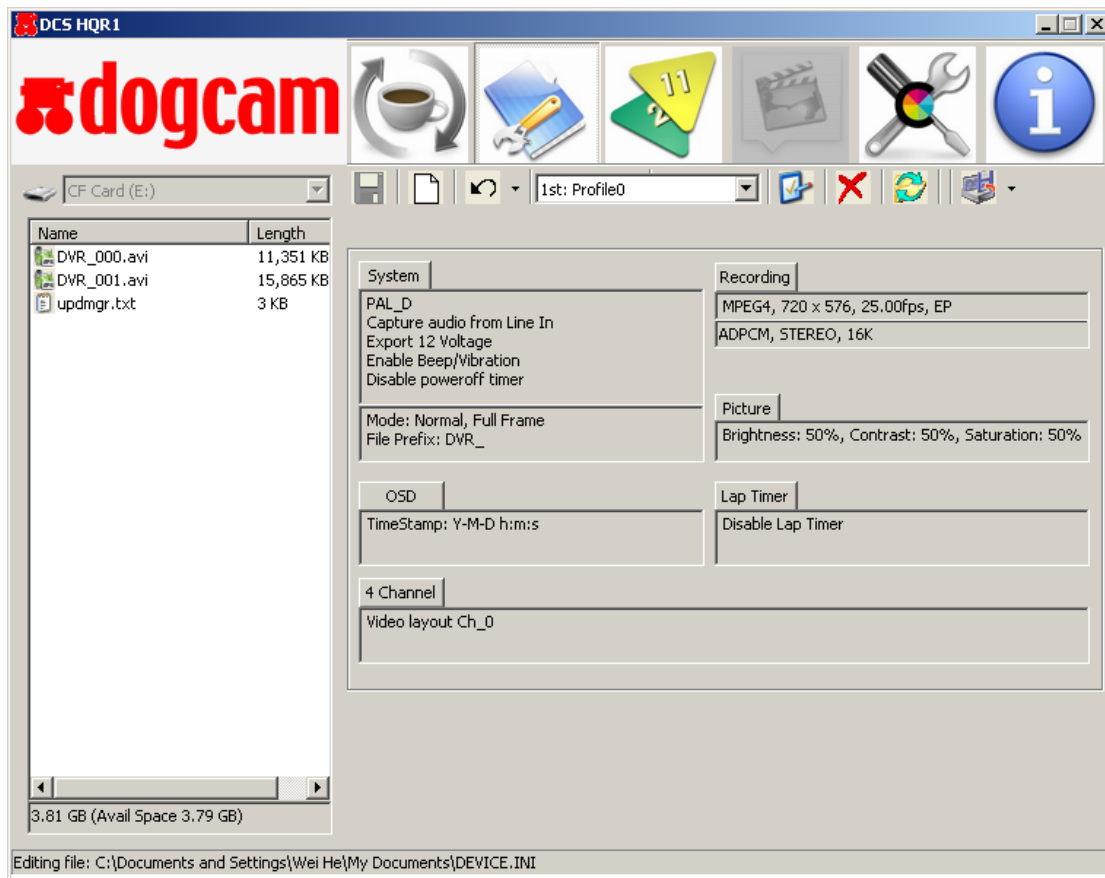


If CF card can't be connected to PC correctly or no CF card be connected to PC, DCS HQR Desktop will display error message to prompt you connect CF card to PC correctly.

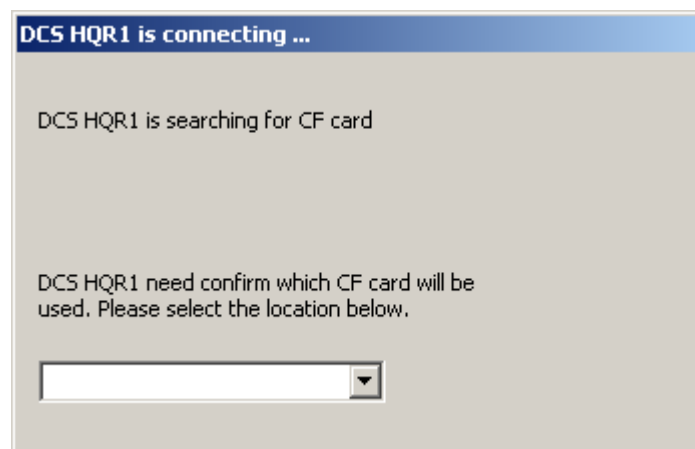


If CF card that you connect to PC had been used in DCS HQR1/HQR4 or be

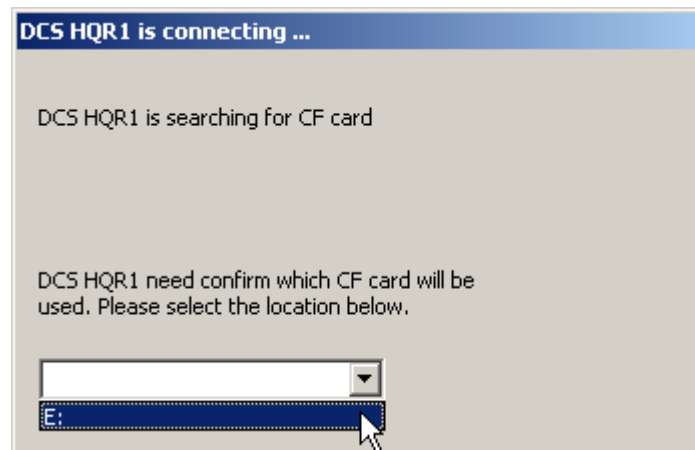
initialized by DCS HQR Desktop, DCS HQR Desktop will detect the DEVICE.INI file on the root directly of CF card, and DCS HQR Desktop will start-up automatically.



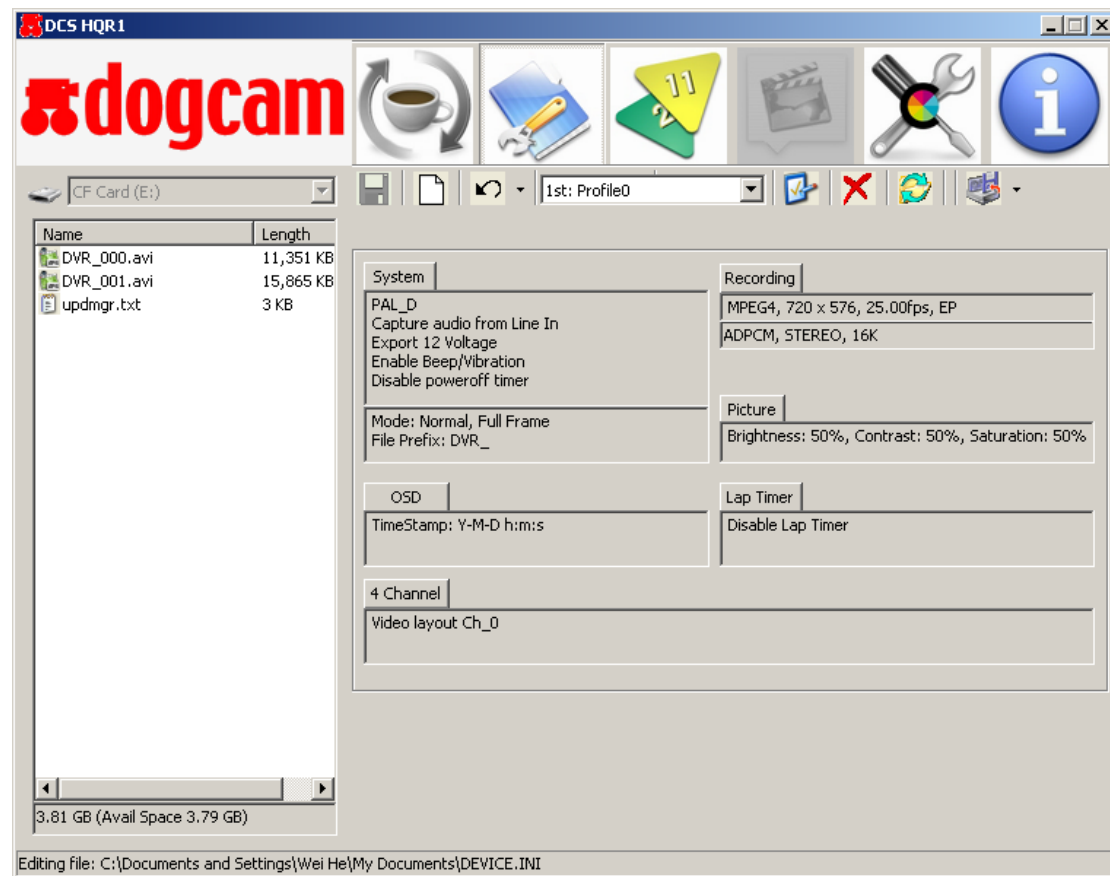
If DCS HQR Desktop detects a new CF card, system will prompt you select a correctly disk that point to CF card.



After you select correctly disk, DCS HQR Desktop will initialize CF card and create DEVICE.INI configuration file on root of CF card automatically.

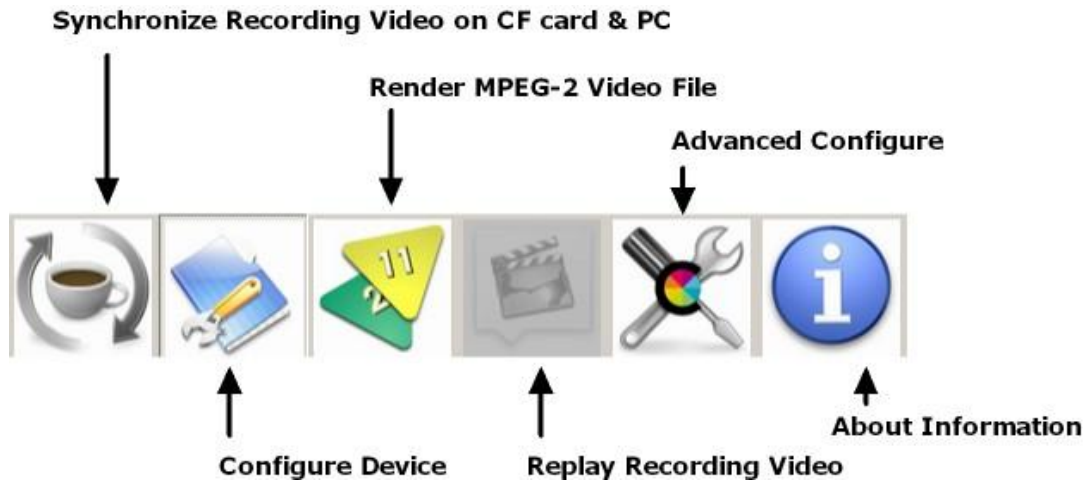


Once DCS HQR Desktop finish initialization, it will start-up automatically.



DCS HQR Desktop Description

DCS HQR Desktop Title Bar



DCS HQR Desktop includes six parts, you can use PocketDVR Desktop to configure the video format, average bit rate, audio in, TV system, time stamp, beacon, convert the recording video etc.



Sync :

Synchronize recording video file on CF card & PC.



Device Configuration :

Configure DCS HQR1/HQR4 device.



Conversion :

Render MPEG-2 data to standard MPEG-2 video.



Play :

Replay recording video on CF card or PC.



Advanced :

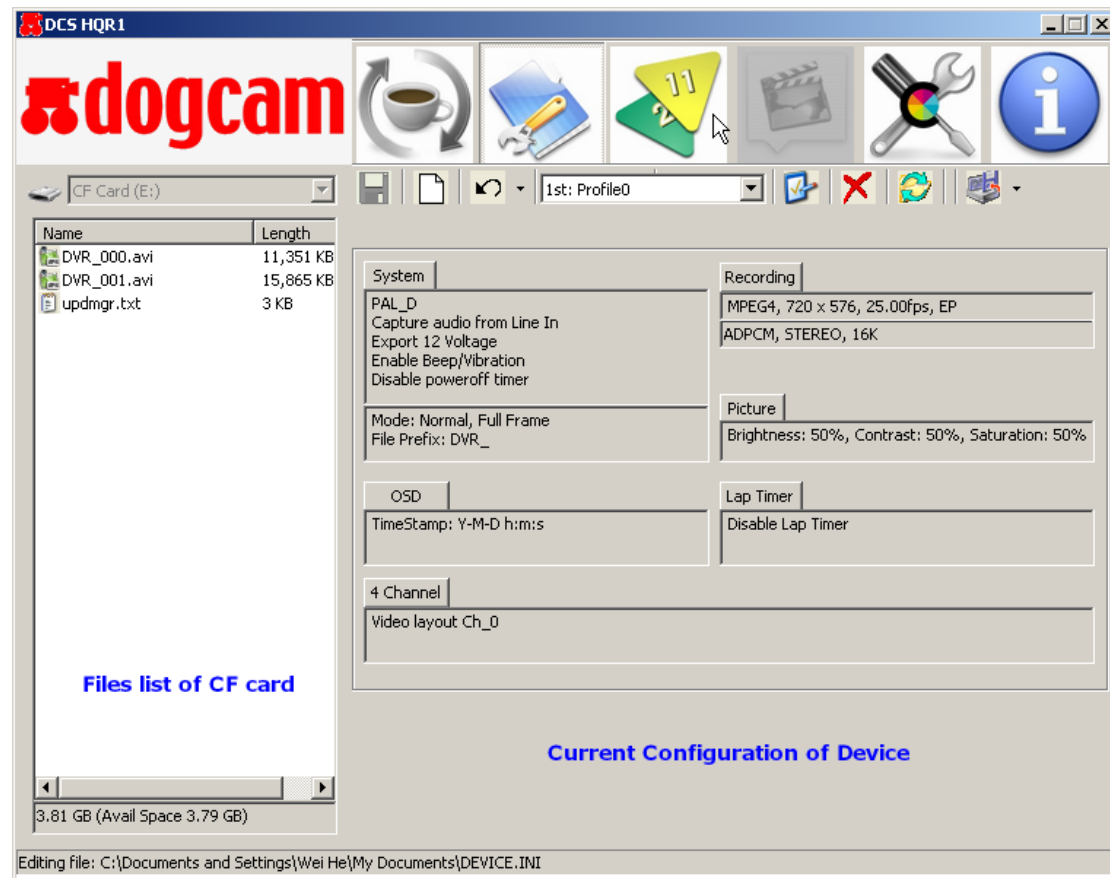
Advanced system configuration.



About :

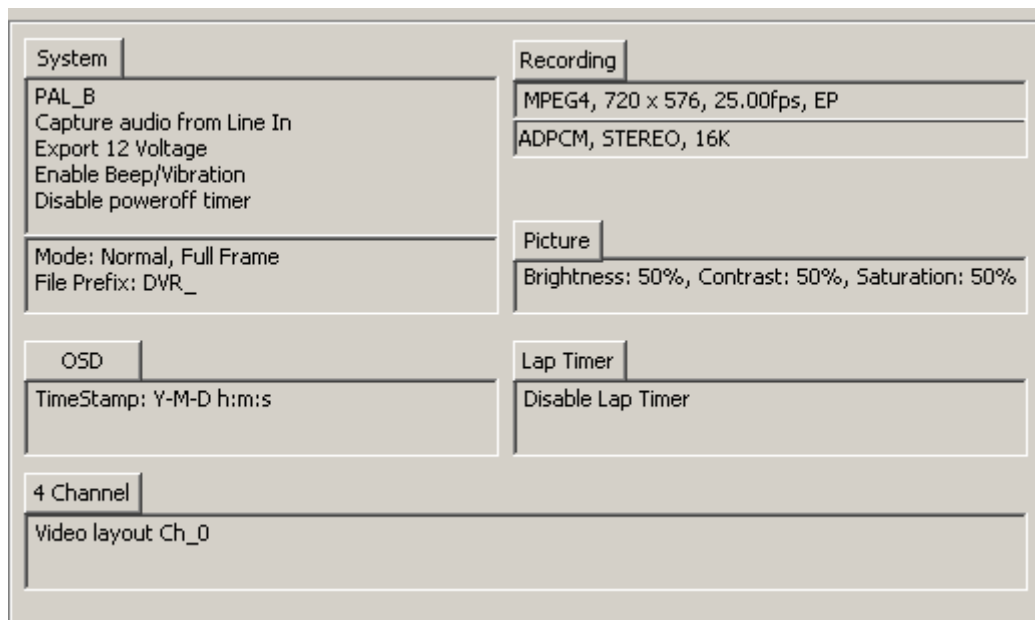
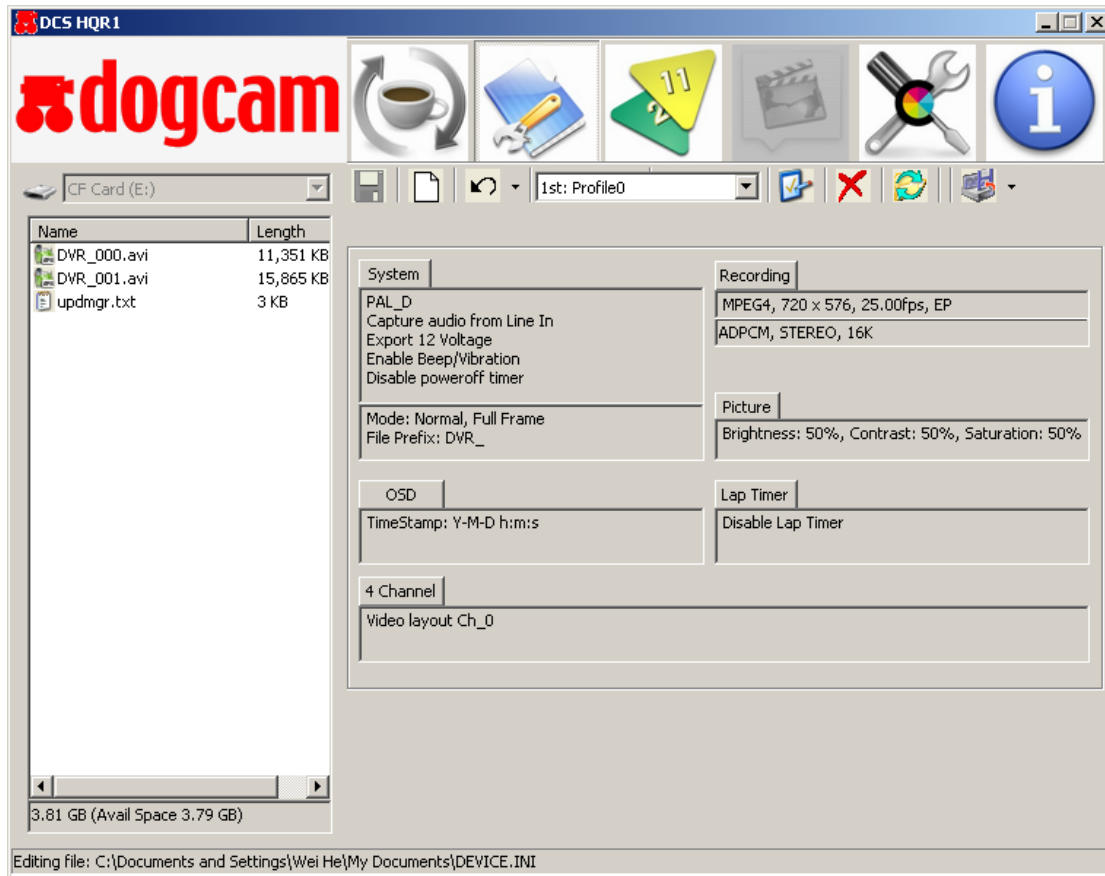
Details information of DCS HQR Desktop.

DCS HQR Desktop Interface



Click **Device Configure** button


on the title bar to configure the DCS HQR1/HQR4.





Save, Cancel & Reset Setting

In all pop configuration menu, you can save, cancel or reset setting to default.



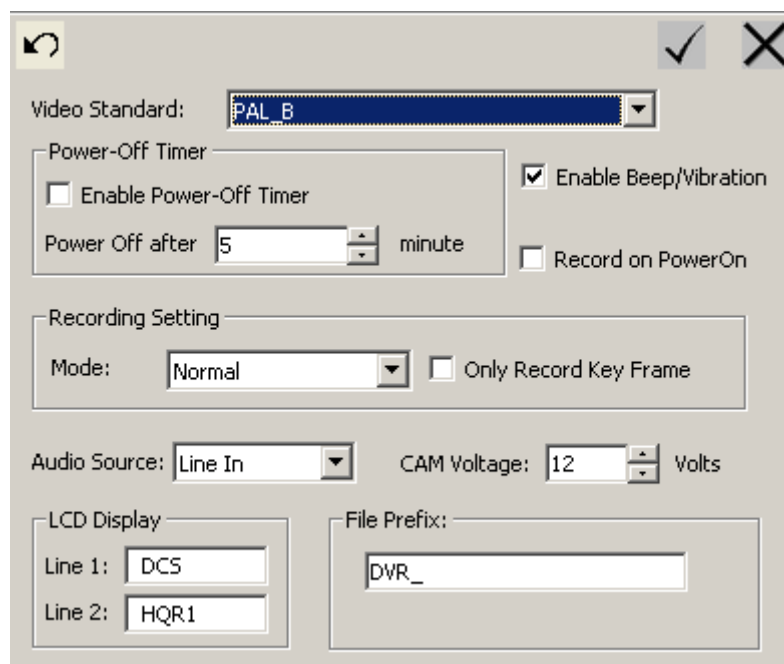
When you finish all settings, you can click **OK** button  to save configuration & exit current configuration tab.

If you want to cancel current modification, please click **Cancel** button  to cancel & exit current configuration tab.

If the configuration had been jumbled, you can click **Reset** button  to restore configuration to default setting.

Device Configuration

Click **System** tab to configure DCS HQR1/HQR4.

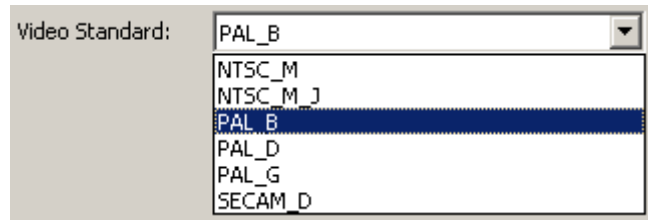


The screenshot shows a configuration window with a toolbar at the top containing a circular arrow (Reset), a checkmark (OK), and an 'X' (Cancel). The settings are organized into several sections:

- Video Standard:** A dropdown menu currently showing 'PAL_B'.
- Power-Off Timer:** A group box containing:
 - ☐ Enable Power-Off Timer
 - Power Off after: a spinner box set to '5' followed by the text 'minute'.
- ☒ Enable Beep/Vibration
- ☐ Record on PowerOn
- Recording Setting:** A group box containing:
 - Mode: a dropdown menu set to 'Normal'.
 - ☐ Only Record Key Frame
- Audio Source:** A dropdown menu set to 'Line In'.
- CAM Voltage:** A spinner box set to '12' followed by the text 'Volts'.
- LCD Display:** A group box containing two text input fields:
 - Line 1: 'DCS'
 - Line 2: 'HQR1'
- File Prefix:** A text input field containing 'DVR_'.

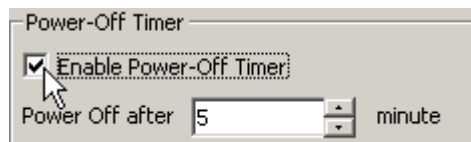
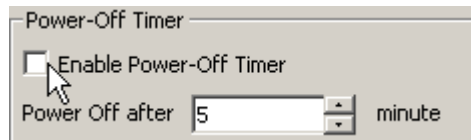
Video System

Please select correct video standard which is corresponding to the video source of camera. Default video standard is now PAL D. It has to be changed for the other video standard.

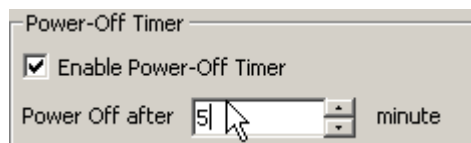


Power-Off Timer

To save the battery power, you can enable the DCS HQR1/HQR4 power off automatically depending on the timer that you have set.



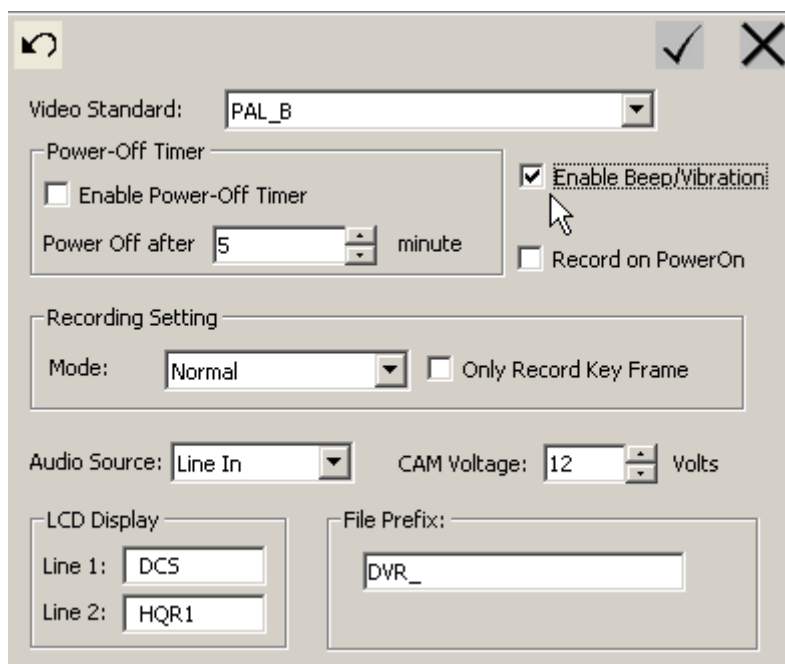
You can set the timer depending on your actual requirements.



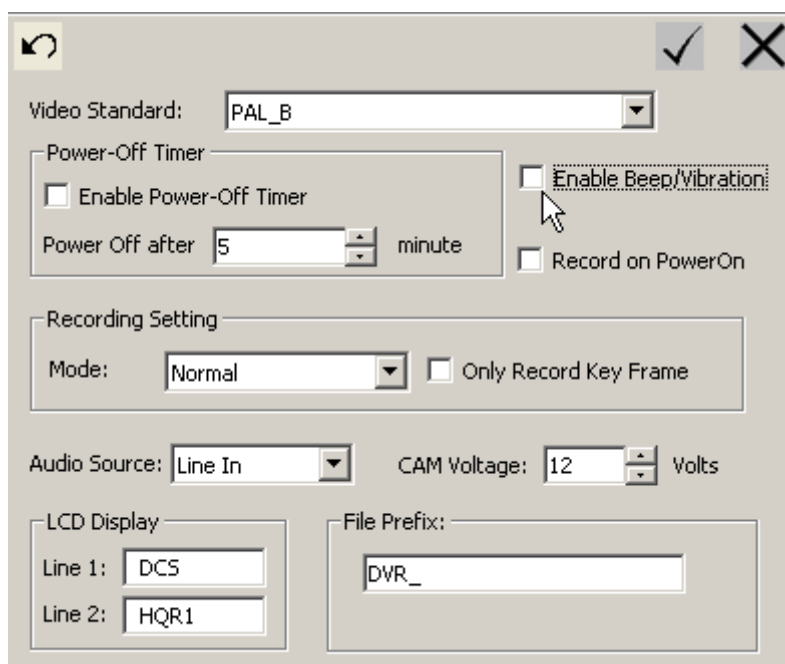
The default status of Power-Off Timer is disable.

Beep/Vibration

DCS HQR1/HQR4 will beep or vibrate to warn you when it starts or stops recording, in some special applications or occasion/environment, you may want to turn this function off, you can disable beep/vibration function.



The default configuration is enable the beep/vibrate feature, you can disable it in the DCS HQR Desktop.

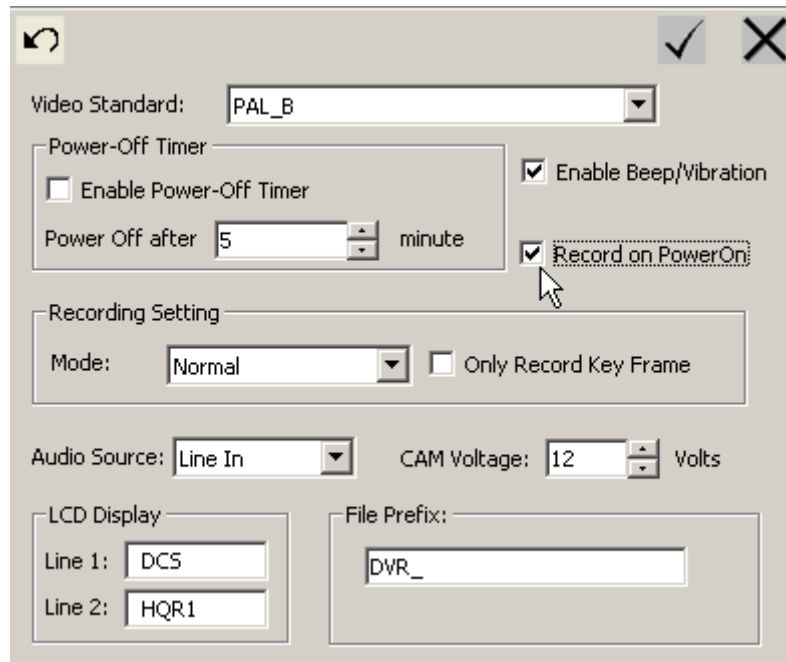


Switch off Enable Beep/Vibration options in DCS HQR Desktop to disable it, now you can operate DCS HQR1/HQR4 in silent mode.

Record on Power On

In some applications, you may need the DCS HQR1/HQR4 to record automatically once the DCS HQR1/HQR4 is powered on.

You can switch on the **Record on PowerOn** option in the DCS HQR Desktop.



The default status of record is manual record via IR remote control, LANC remote control or push button.

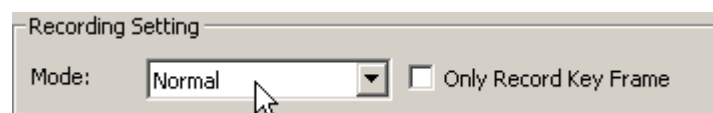
Recording Setting : Normal, Cycle Record & Key Frame

You can configure the DCS HQR1/HQR4 in normal record or cycle record mode.

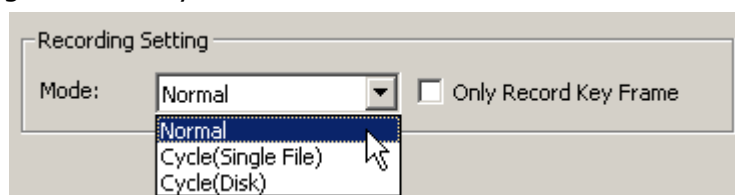
1. Normal Record Mode

In normal record mode, DCS HQR1/HQR4 will record video & save recording video in multi-single video file, the maximum size of single recording video file is 2GB depend on limit of system.

The default of record mode is Normal mode.



You can select Normal **Record Mode** option to enable normal record mode if current configuration is cycle item.



If you want to use the DCS HQR1/HQR4 in a surveillance application, you can set the **Record Mode** to Cycle Record mode.

2. Single File Cycle Record Mode

The DCS HQR1/HQR4 has two cycle record modes, Single File Cycle Record & Full Disk Cycle Record mode.

In Single File Cycle Record mode, the DCS HQR1/HQR4 will save recordings in single file only, the maximum size of single recording video file is 2GB, when video reaches the 2GB limit, the system will save the new recordings from the begin of recording video file.

If your CF card is smaller than 2GB, the DCS HQR1/HQR4 will save recording video in single file only, when CF card is full, system will save the new recorded video from the beginning of the recorded video file.

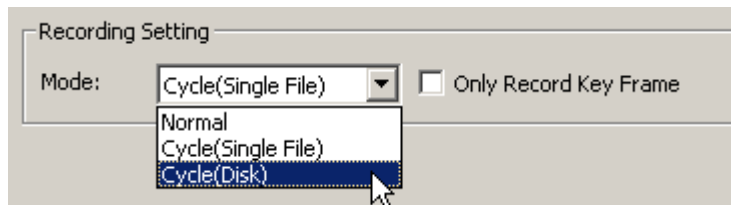
You can select Cycle (Single File) item in **Record Mode** option to enable Single File Cycle Record mode.



3. Full Disk Cycle Record Mode

In Full Disk Cycle Record mode, the DCS HQR1/HQR4 will record continually, when the CF card is full, the DCS HQR1/HQR4 will record the video overwriting the oldest recorded file.

You can select Cycle (Disk) item in **Record Mode** option to enable Full Disk Cycle Record mode.



If you set the DCS HQR1/HQR4 in cycle record mode, all old recorded video file on the CF card will be deleted on system startup.

4. Only Record Key Frame

If you want to record video in surveillance application, you can record key frame only to decrease the size of recording video & increase recording time for a same

CF card.



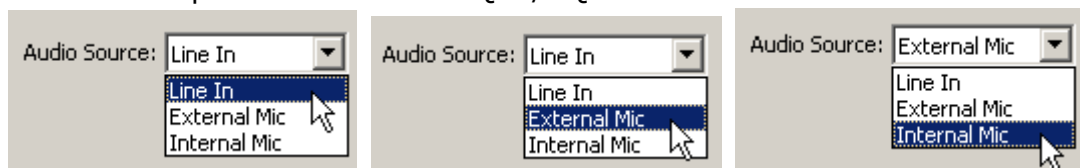
In this option, DCS HQR1/HQR4 will record 1 frame per 15fps. In PAL video standard, approx 3 frames per 2 seconds are saved; in NTSC video standard, approx 2 frames per second are saved.

If you select this option, system will save video only and the sound will be muted.

NOTE : The option is only for MPEG-4.

Audio Source

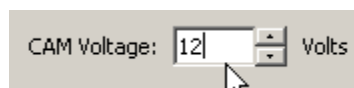
Please select the correct audio in setting which is based on your actual audio input. Default audio source is **Line In**, you need to select **External Mic** if you use an external microphone, or you can select **Internal Mic** item if you use the internal microphone within DCS HQR1/HQR4.



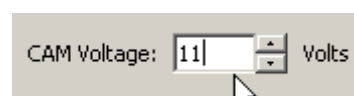
The External Mic & Internal Mic option will increase gain of volume.

Output Voltage

DCS HQR1/HQR4 can power an external device via the power output adapter on the IRIS-RCA jump cable, you can power an external bullet camera or external LCD monitor (you can adjust output voltage from 9V to 12V).

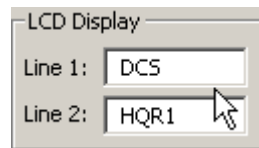


If you want to power multiple external bullet cameras, please set the output voltage lower than 11V, and you need connect AC power adapter for DCS HQR1/HQR4.



LCD Display

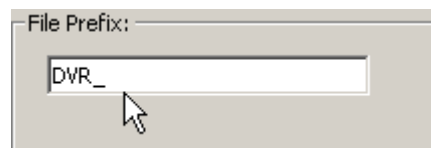
You can customize the LCD message.



The maximum length of characters in every line is 8, you can use printable characters only & exclude the character "~".

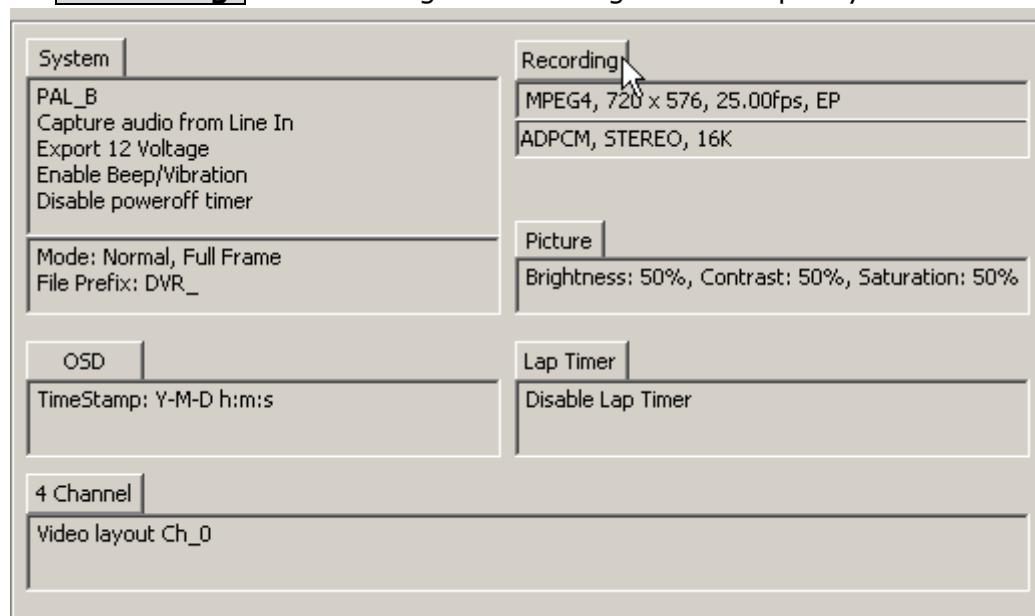
Video File Name

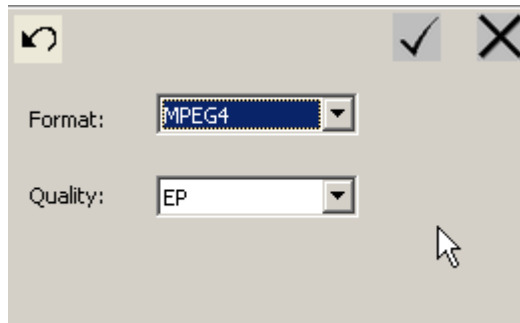
Record file name starts with DVR_ by default. The file name will be DVR_xxx.avi. XXX is incremental from 000 to 999. The prefix DVR_ can be modified in DCS HQR Desktop.



Recording Format & Quality

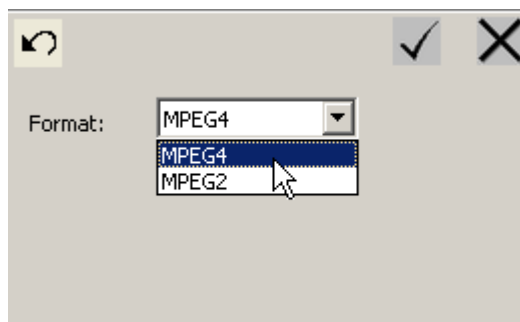
Click **Recording** tab to configure recording format & quality.





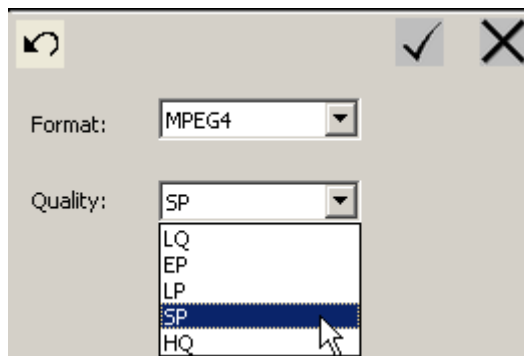
Video Format

Select MPEG-2 or MPEG-4 format for your recording video.



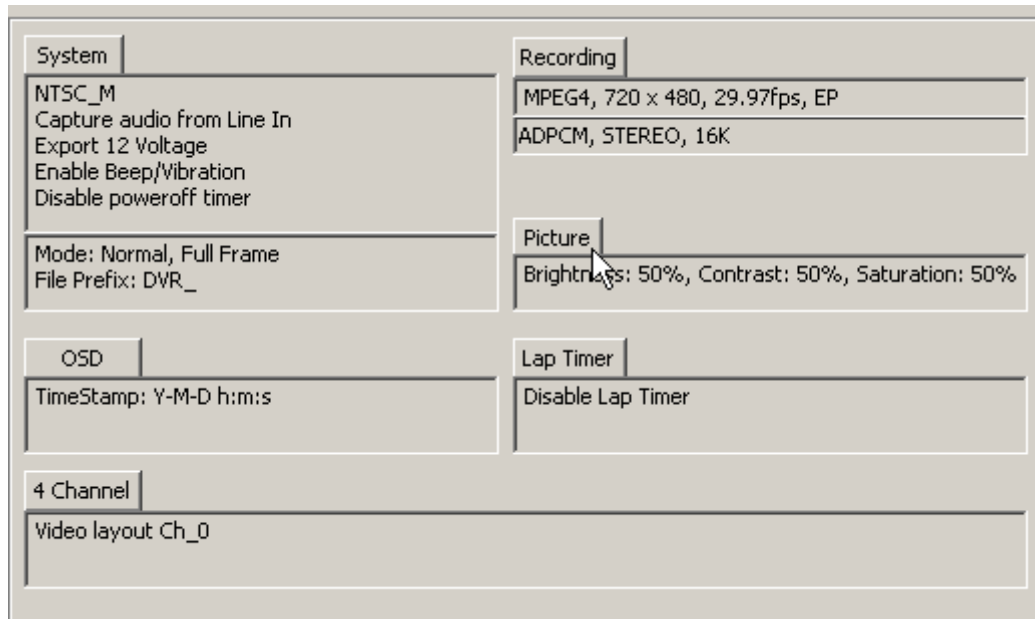
Video Quality

Select proper video quality based on the scene and requirement. Please refer to Video Quality section.

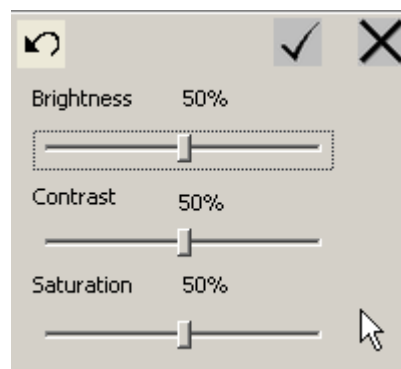


Picture Adjust

Click **Picture** tab to adjust recording picture quality.

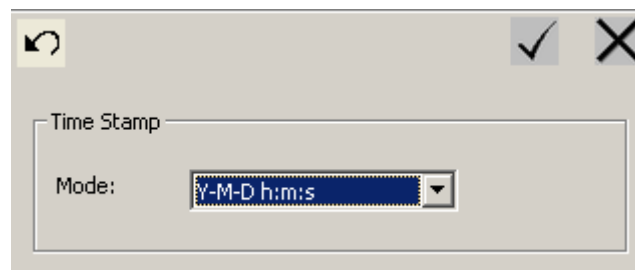
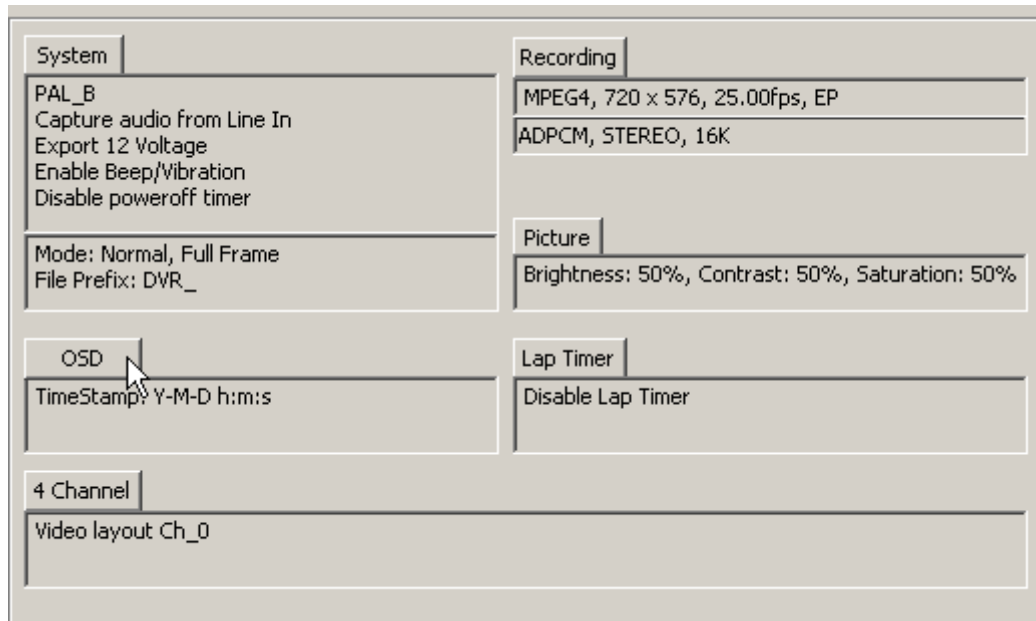


You can adjust the brightness, contrast & saturation of the picture to get the best quality. The default value is 50%.



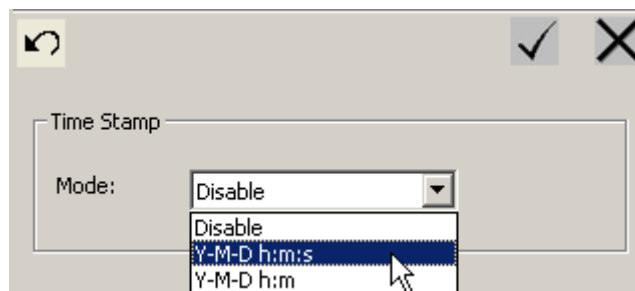
OSD Configuration

Click **OSD** tab to configure Time Stamp & OSD information.

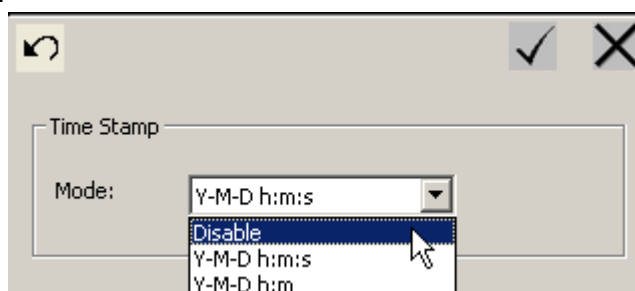


Time Stamp

You can enable time stamp in two formats to stamp your recorded video with real date & time.



You can disable Time Stamp features if you don't need record date & time in your recordings.



On the DCS HQR1/HQR4, priority of Beacon is higher than Time Stamp, the Time Stamp will be disabled at once when the Beacon is enabled.

Configuration of Lap Timer

Click **Lap Timer** tab to configure Lap Timer.

The screenshot shows the main configuration window with several tabs: System, Recording, OSD, Lap Timer, and 4 Channel. The **Lap Timer** tab is selected and highlighted with a mouse cursor. The window is divided into sections for each tab. The **System** tab contains settings for PAL_B, audio capture, export voltage, beep/vibration, and poweroff timer. The **Recording** tab shows video and audio recording settings. The **OSD** tab shows timestamp format. The **Lap Timer** tab (active) shows a checkbox for 'Enable Lap Timer' and a 'Disable Lap Timer' button. The **4 Channel** tab shows video layout settings.

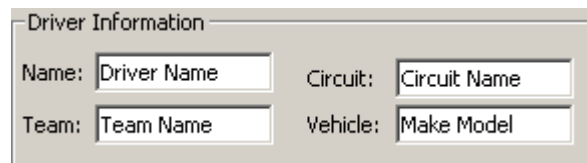
The screenshot shows the 'Lap Timer' configuration dialog box. It has a title bar with a refresh icon, a checkmark, and a close button. The dialog contains the following sections:

- Enable Lap Timer:** A checkbox that is currently unchecked.
- Split Signal Same as Beacon:** A checkbox that is currently unchecked.
- Split Count:** A dropdown menu set to 0.
- Mask Time:** A spinner box set to 10 seconds.
- Display Position:** A section with a table for setting coordinates.

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520
- Driver Information:** A section with text boxes for:
 - Name: Driver Name
 - Circuit: Circuit Name
 - Team: Team Name
 - Vehicle: Make Model

Set Driver Information

After you enable the Lap Timer function, you can record driver name, team, circuit for racing, make & model of vehicle on the screen of recording video.



Driver Information

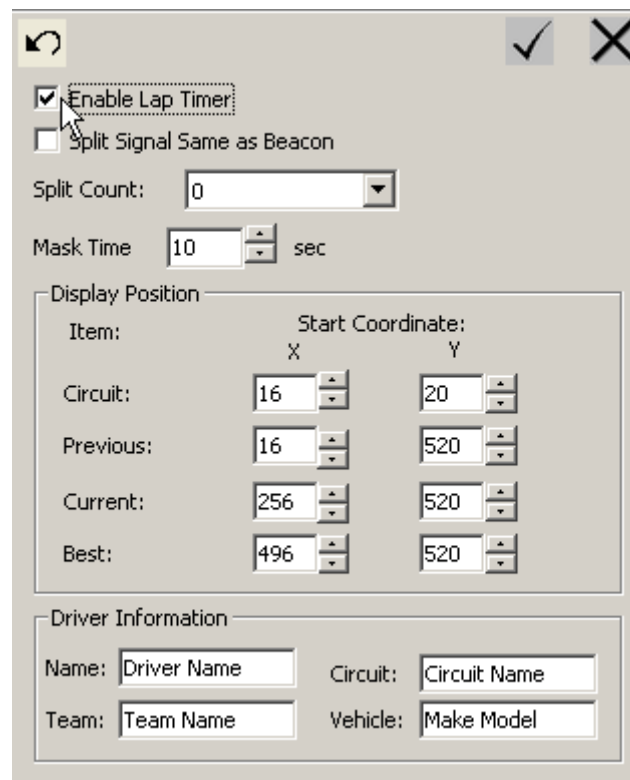
Name: Circuit:

Team: Vehicle:

You can modify these information based on actual details information.

Beacon & Split Beacon

Set **Beacon Enable** to receive Beacon signal. The default is disable.



Beacon & Split Beacon

☒ Enable Lap Timer

☐ Split Signal Same as Beacon

Split Count:

Mask Time sec

Display Position

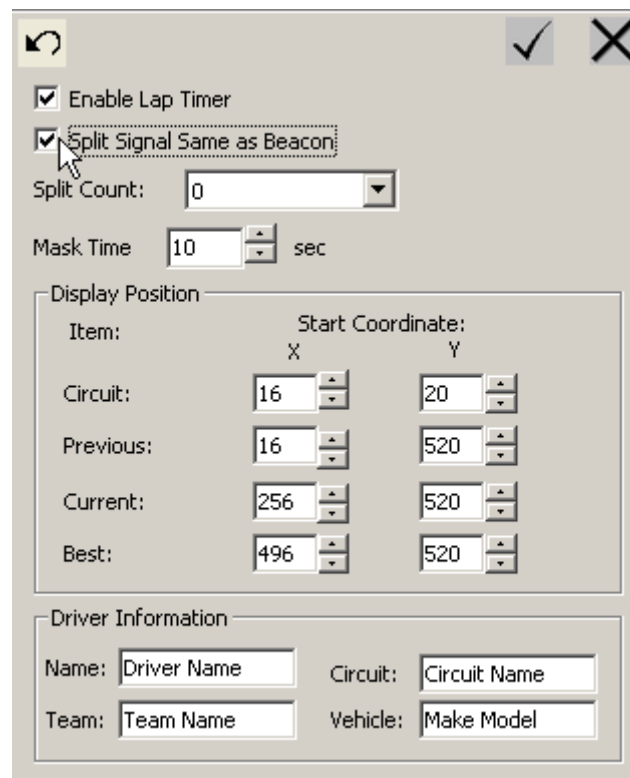
Item:	Start Coordinate:	
	X	Y
Circuit:	<input type="text" value="16"/>	<input type="text" value="20"/>
Previous:	<input type="text" value="16"/>	<input type="text" value="520"/>
Current:	<input type="text" value="256"/>	<input type="text" value="520"/>
Best:	<input type="text" value="496"/>	<input type="text" value="520"/>

Driver Information

Name: Circuit:

Team: Vehicle:

If you use Split Beacon on racing, you must switch to **Split Signal** option to enable it.



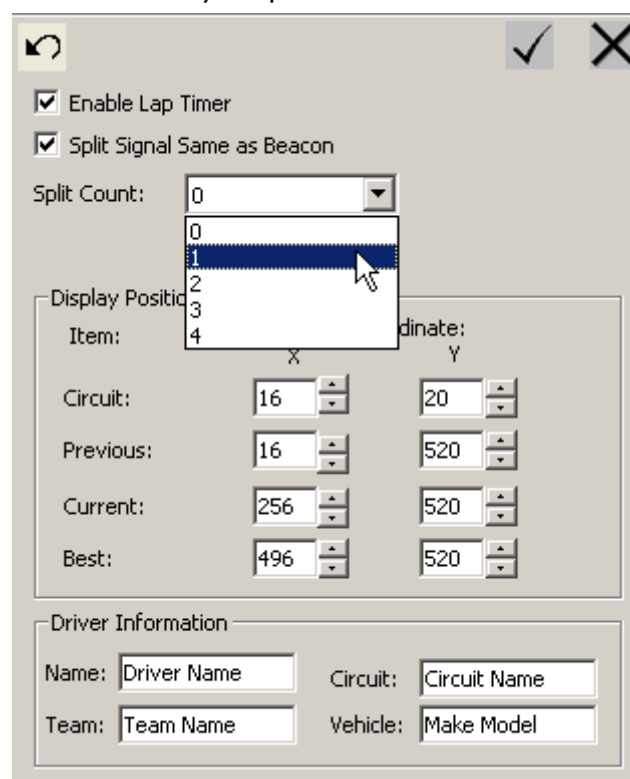
The screenshot shows a configuration window with the following settings:

- ☒ Enable Lap Timer
- ☒ Split Signal Same as Beacon
- Split Count: 0
- Mask Time: 10 sec
- Display Position**

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520
- Driver Information**

Name:	Driver Name	Circuit:	Circuit Name
Team:	Team Name	Vehicle:	Make Model

You can select the amount of Split Beacon for every loop, the maximum amount of Split Beacon is four on every loop.



The screenshot shows the same configuration window as above, but with the 'Split Count' dropdown menu open, displaying the following options:

- 0
- 1
- 2
- 3
- 4

The 'Split Count' is currently set to 0.

If you don't use the Split Beacon emitter on racing, please set the amount of Split Beacon emitter to zero or disable **Split Beacon** option directly.

The default configuration of the amount of Split Beacon is zero.

The image displays two screenshots of the DCS HQR1/HQR4 configuration window, illustrating the 'Split Signal Same as Beacon' setting.

Top Screenshot (Default Configuration):

- ☒ Enable Lap Timer
- ☒ Split Signal Same as Beacon
- Split Count: 0
- Mask Time: 10 sec
- Display Position:**

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520
- Driver Information:**
 - Name: Driver Name
 - Circuit: Circuit Name
 - Team: Team Name
 - Vehicle: Make Model

Bottom Screenshot (Modified Configuration):

- ☒ Enable Lap Timer
- ☐ Split Signal Same as Beacon
- Split Count: 0
- Mask Time: 10 sec
- Display Position:**

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520
- Driver Information:**
 - Name: Driver Name
 - Circuit: Circuit Name
 - Team: Team Name
 - Vehicle: Make Model

DCS HQR1/HQR4 can record most 129 loop Lap Timer data on single recording video.

The **Time Stamp** will be disabled when you enable the beacon function.

The Beacon Configuration option is only for the special edition of DCS HQR1/HQR4 with Lap Timer function.

Adjust Position of Lap Timer Data on screen

You can adjust position of Lap Timer data on screen to fit different requirement & playback devices.

You can adjust the position of all Lap Timer data item.

The 'Display Position' dialog box contains a table for setting the start coordinates (X and Y) for four Lap Timer data items. Each item has a text input field and a vertical spinner control.

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520

Select item of Lap Timer data that you want to adjust, then set the value of X & Y coordinate on input area.

The first screenshot shows the 'Circuit' item selected, with the mouse cursor clicking on the 'X' coordinate input field (16). The second screenshot shows the 'Circuit' item selected, with the mouse cursor clicking on the 'Y' coordinate input field (20).

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520

The unit of X & Y coordinate is pixel, the value bound is 720x576 of PAL & 720x480 of NTSC video standard.

Repeat above process to configure all position that you want to set.

Connection

Simply connect the External Beacon Receiver into the Beacon jack on the DCS HQR1/HQR4 and point the External Beacon Receiver to the Beacon. The Lap Timer will start to work when Beacon signal is detected.

Mask Time

The Mask Timer is the time interval that DCS HQR1/HQR4 doesn't respond after the detection of Beacon & Split Beacon signal. The default value is 10 sec. If the time interval of twice signal from Beacon & any Split Beacon emitter is smaller than the Mask Time that you set, the second signal will be ignored by DCS HQR1/HQR4.

When Split Beacon option be enabled, any Split Beacon emitter & standard Beacon emitter will be as alike signal emitter.

The screenshot shows a configuration window for the DCS HQR1/HQR4 device. It includes the following settings:

- ☒ Enable Lap Timer
- ☐ Split Signal Same as Beacon
- Split Count: 0
- Mask Time: 10 sec
- Display Position:

Item:	Start Coordinate:	
	X	Y
Circuit:	16	20
Previous:	16	520
Current:	256	520
Best:	496	520
- Driver Information:

Name:	Driver Name	Circuit:	Circuit Name
Team:	Team Name	Vehicle:	Make Model

Recording of Lap Time

The time of each lap is recorded in the DVR_xxx.txt file. The file will look like:

```

Hostname
Team WORKGROUP
Sport Motor
Scene Security
  
```

READY.. = 04:05.588

Summary:

Total Record Time: 04:05.588

** Lap Timer is not a standard function of DCS HQR1/HQR4 standard version, it is optional only for the special version.*

Configure 4-Channel DCS HQR4

The 4-Channel DCS HQR4 can connect four video inputs at the same time.

Click **4 Channel** tab to configure 4 Channel DCS HQR4.

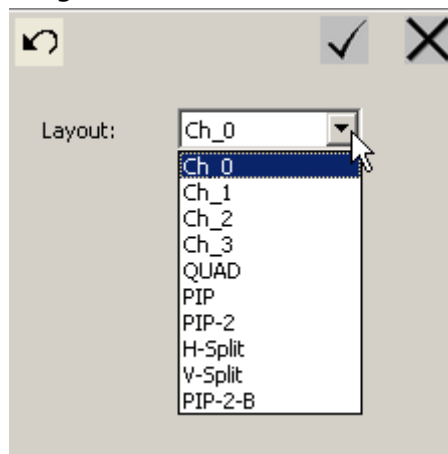
The screenshot shows the DCS HQR4 configuration window with the '4 Channel' tab selected. The window is divided into several sections: 'System' (PAL_B, Capture audio from Line In, Export 12 Voltage, Enable Beep/Vibration, Disable poweroff timer), 'Recording' (MPEG4, 720 x 576, 25.00fps, EP, ADPCM, STEREO, 16K), 'Picture' (Brightness: 50%, Contrast: 50%, Saturation: 50%), 'OSD' (TimeStamp: Y-M-D h:m:s), 'Lap Timer' (Disable Lap Timer), and '4 Channel' (Video layout: Ch_0). A mouse cursor is pointing at the '4 Channel' tab.

The screenshot shows the 'Video layout' configuration dialog box. It has a title bar with a refresh icon, a checkmark, and a close button. The dialog contains the following fields: 'Layout:' with a dropdown menu showing 'Ch_0', 'Position:' with a dropdown menu showing '0', 'Border Color:' with a dropdown menu showing 'White', and two checkboxes: 'Border' (checked) and 'Border Blink' (unchecked).

Video Input

You can select 1, 2, 3 or 4 channel video input at the same time, and record the

video in the same recording video.

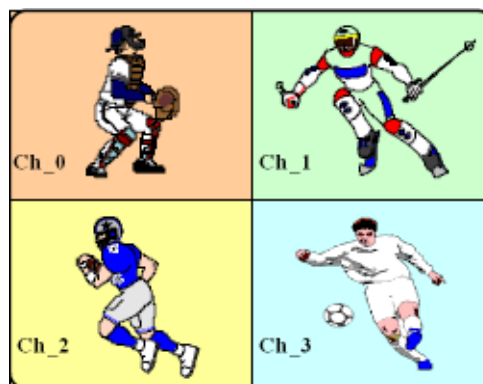


In the 4 Channel area, pull down menu of Layout to select the video input source, amount of video inputs and video input arrange method.

The **Ch_0**, **Ch_1**, **Ch_2** & **Ch_3** item mean video in 0 to video in 3 inputs are selected, this is for 1 channel recordings, you can select any video input that you want to record from.

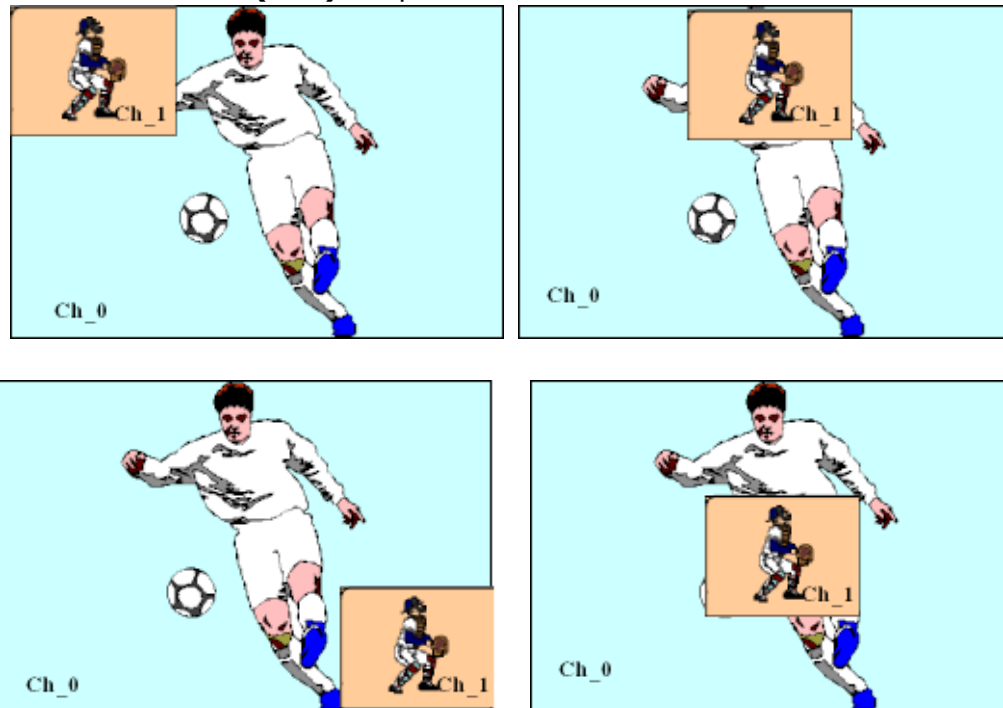


If you want to record 4 channel video at the same time, please select **QUAD**. The recorded video will include 4 channel video in one video file.

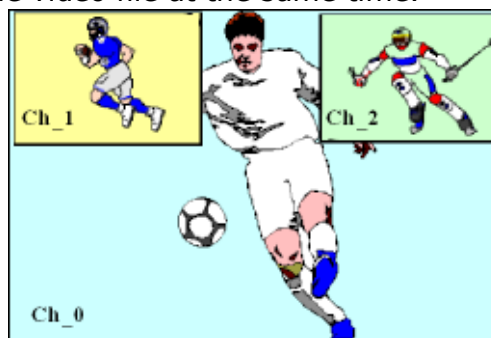


PIP item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file at the same time.

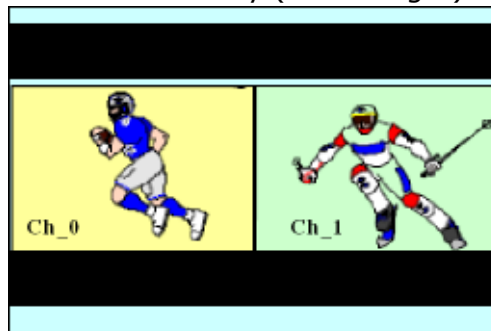
PIP mode supports nine different position beforehand, please consult the **Picture-In-Picture (PIP)** chapter for more details.



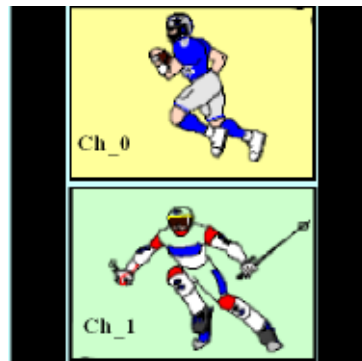
PIP-2 item is for 3 channel video input at the same time, the 3 channel video will be recorded in one video file at the same time.



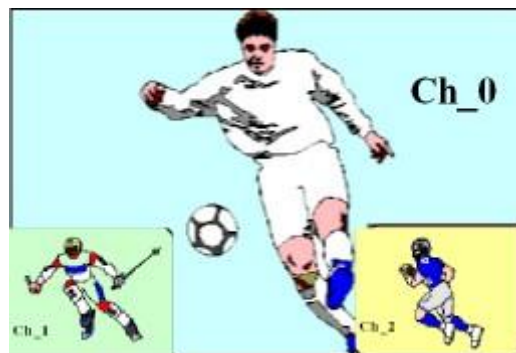
H-Split item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file. **H-Split** item means the 2 channel video input array in recording video file horizontally (Left & Right).



V-Split item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file at the same time. **V-Split** item means the 2 channel video input array in recording video file vertically (Top & Bottom).

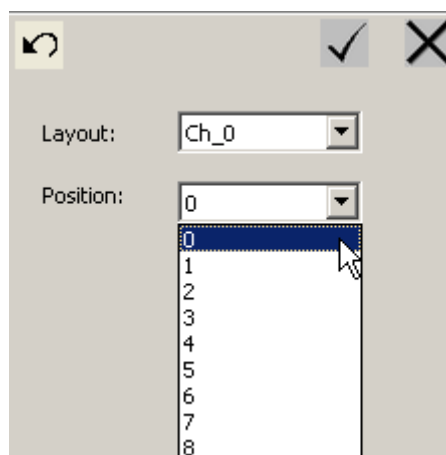


PIP-2-B item is another arrange method for 3 channel video input at the same time, the 3 channel video will be recorded in one video file at the same time.



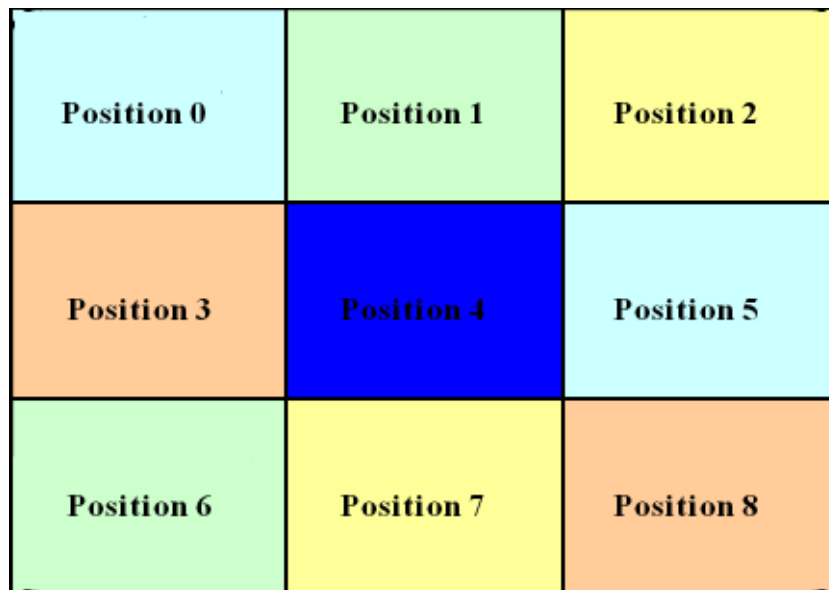
Picture-In-Picture (PIP)

You can configure any position for PIP recording video, it has nine different positions, you can select any position for your requirement from **Position** option.



You can configure or switch the array method of Picture-In-Picture via the DCS

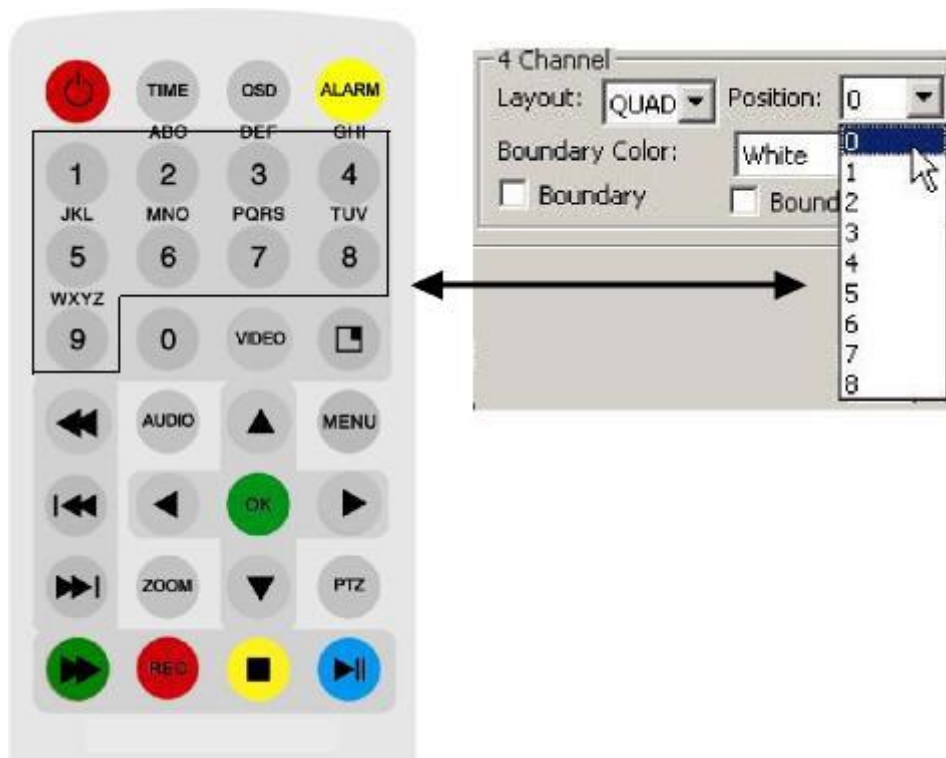
HQR Desktop & IR remote controller.



The numeric keys on the IR remote controller can be programmed with 9 array methods of Picture-In-Picture, you can configure it & select any one array method as your default array using the DCS HQR Desktop.

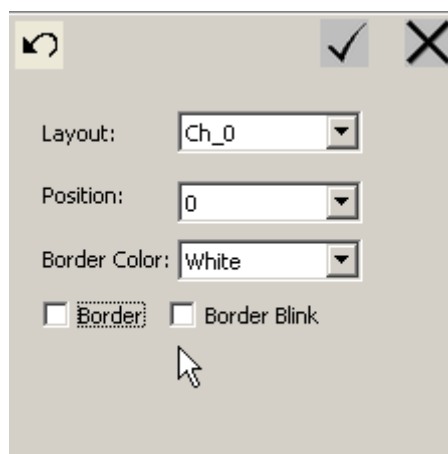
You can switch the array method using the numeric keys on the IR remote controller directly when you record the video using the 4 Channel DCS HQR4. The numeric keys 1~9 control the 9 items in the **Position** pull down menu.

Numeric Key on IR remote Controller	Item in Position Menu
1	Position 0
2	Position 1
3	Position 2
4	Position 3
5	Position 4
6	Position 5
7	Position 6
8	Position 7
9	Position 8

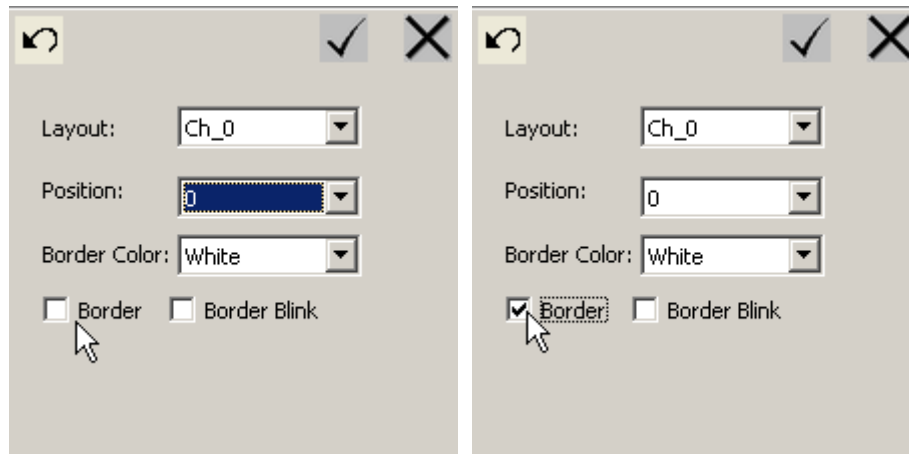


The Border of Frame

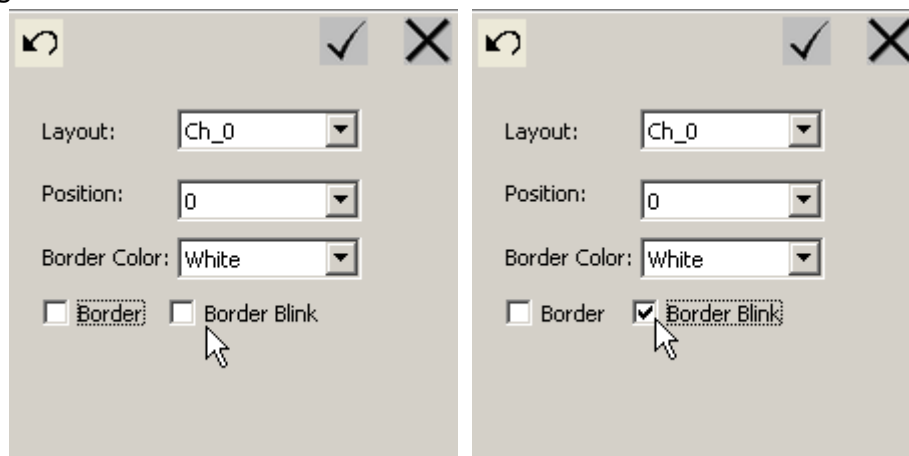
When you use 2 or 4 channel video input, you can enable/disable or select different styles of frame for a better scene effect.



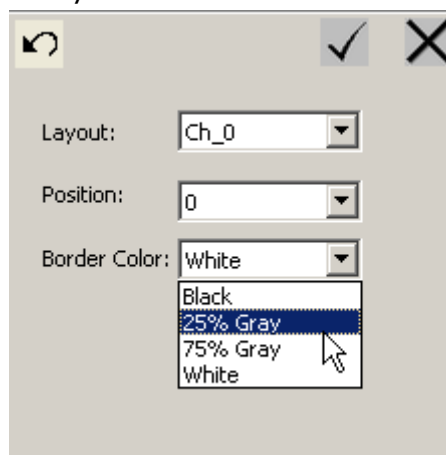
Switch on **Border** option to enable frame of video for Picture-In-Picture function.



At the same time, you can switch on **Border Blink** option to enable frame of video glint.



You can select 4 different styles of border frame.



Configuration Menu Output

4 Channel DCS HQR4 supports analog output to TV or Monitor, when you connect a TV or Monitor to the Audio/Video Output, you can preview current video & the configure menu.

NOTE: This option is only for 4-Channel DCS HQR4, it is not supported by 1-CH DCS HQR1.

Multi Profile Item Configuration

Configure & Save Multi-Profile Item


DCS HQR1/HQR4 support multi-profile for different application, you can save 10 different configurations into single configuration file, then you can switch to any profile between multi-profile via LCD menu in your application.

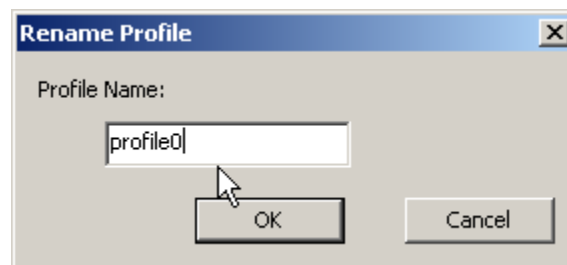
You can configure & save multi-profile items using DCS HQR Desktop.

You can label every profile item using a special name that be differentiated & remembered easily.

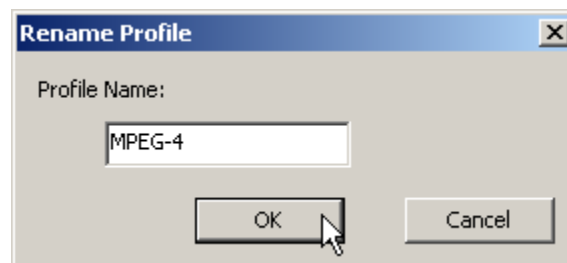
You can create, rename, delete & save profile item using corresponding button on button bar.



Click  to name or rename the first profile item.




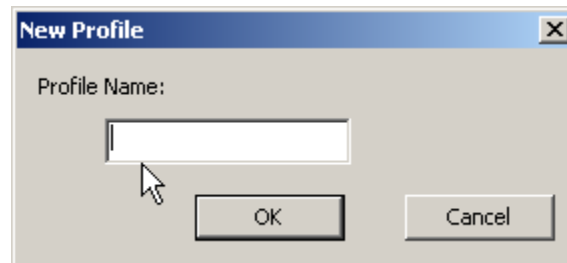
Input new name of the first profile item, then click **OK** button to save it.



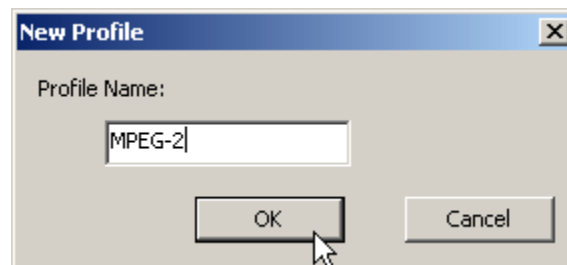
After you name or rename the first profile item, you can configure it depending on your application or requirement.

To configure DCS HQR1/HQR4, please consult **Configure DCS HQR1/HQR4** chapter.

After you finish the first profile, please click  to add new profile item.

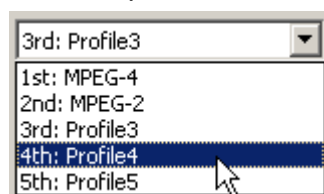


Input the name of the second profile item in name area, then click **OK** button to save it.



Now you can configure the second profile item as same as for the first profile item.

You can select any profile item from pull-down menu to configure it at anytime.



DCS HQR Desktop can keep a maximum of 10 profile items for a device at the same time. Please note, only one profile item is valid on once. You can switch one to another profile item via the LCD menu.

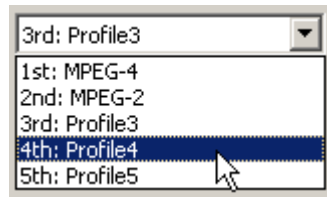
After you finish the configuration for all profile items that you set, you can click



button to save all configurations.

Delete Profile Item

If you want to delete any profile item, please select the profile item that you want to delete from pull-down menu.




Then click  to delete it.

After you delete any profile item, the profile item after it will ascend to current arrange position.

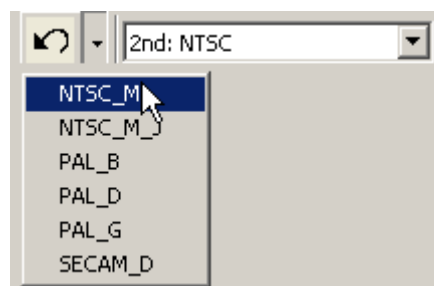


Load Old Configuration

If you want to cancel all current configurations, you can click  to reload the last saved configuration, all changes that aren't saved will be lost.

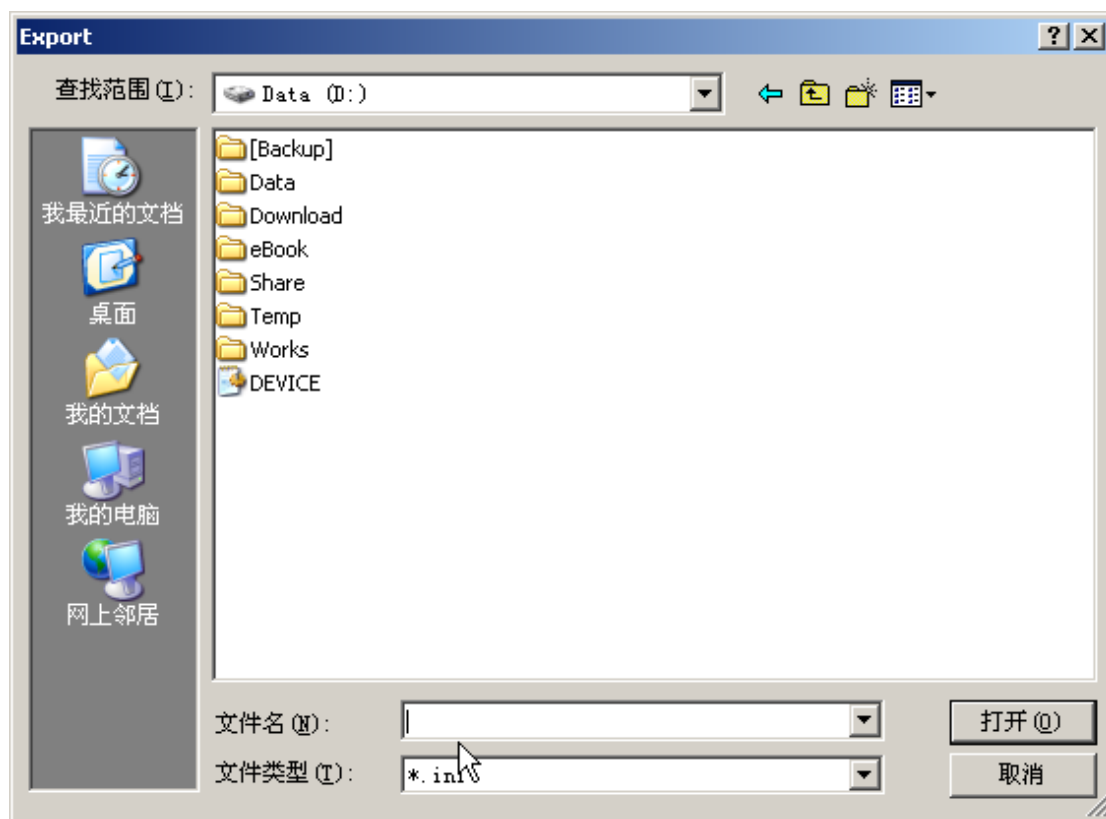
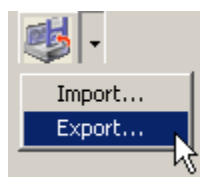
Get the Default Configuration of Special Video Standard

Sometimes, you want to record different standard TV or video signal, you can set any profile item to special video standard, the resolution, frame & correlative internal parameter will be set to proper depending on the video standard, and the valid coordinate range of Lap Timer data display will be adjusted to the proper position automatically.

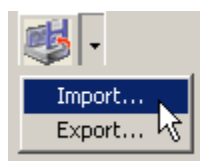


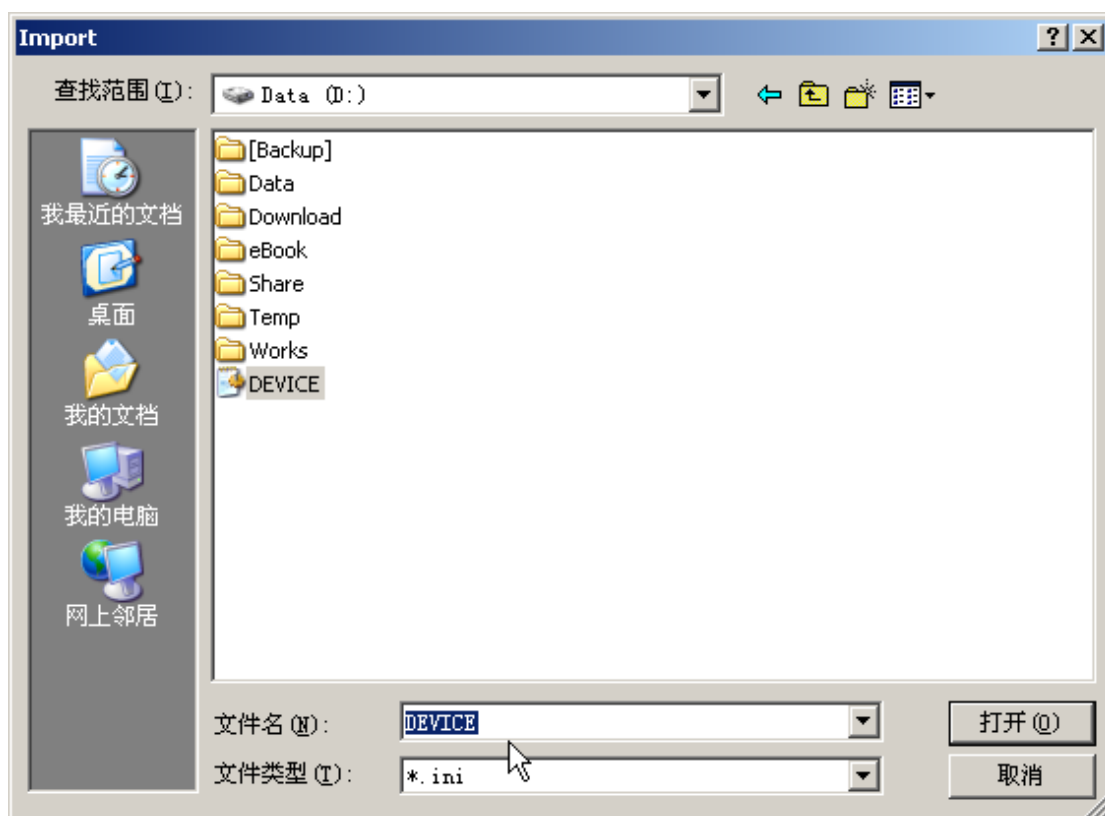
Backup & Restore Configuration File

When you finish configuration for all profile items, to avoid correct configurations being lost or confused, after you save all configuration, you can export configuration file to appointed disk or folder.



You can import configuration file to restore DCS HQR1/HQR4 to configuration that you backed up previously.





Switch Configuration Item

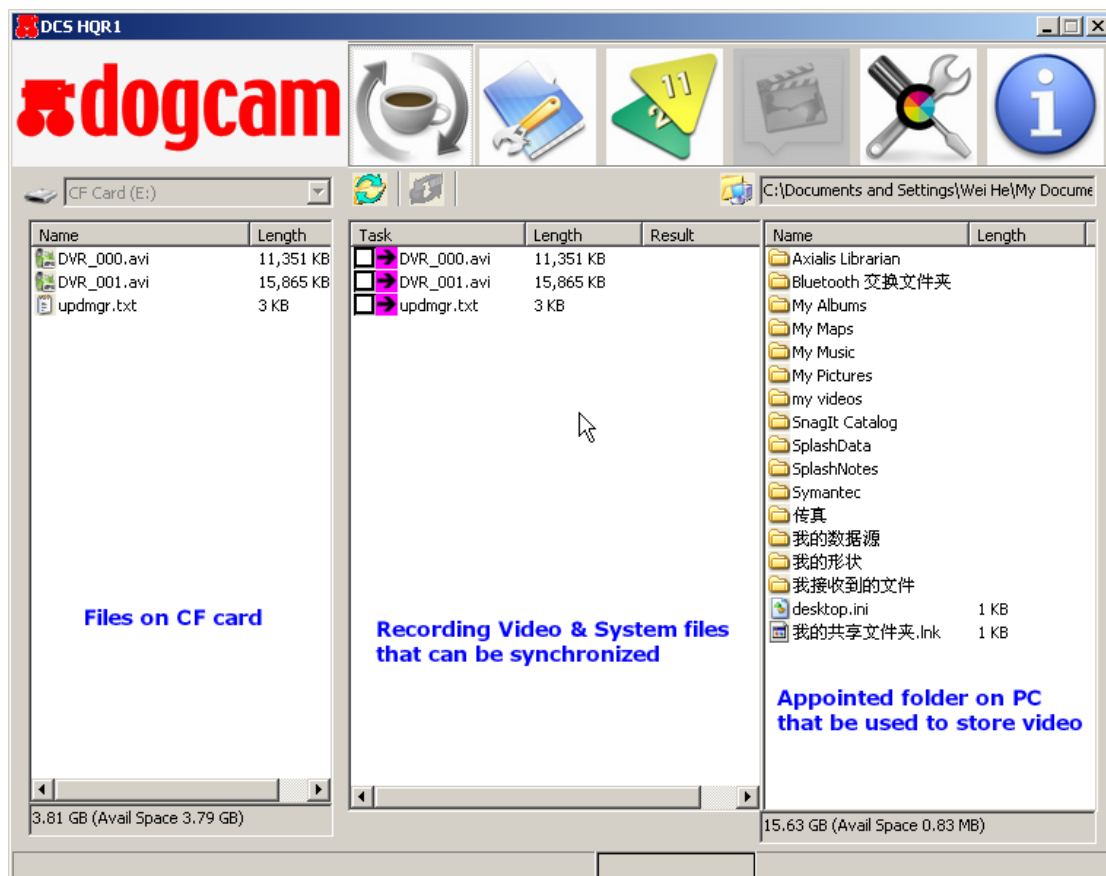
You can switch configuration item via LCD Menu during using the DCS HQR1/HQR4.

Synchronize Video between CF & PC

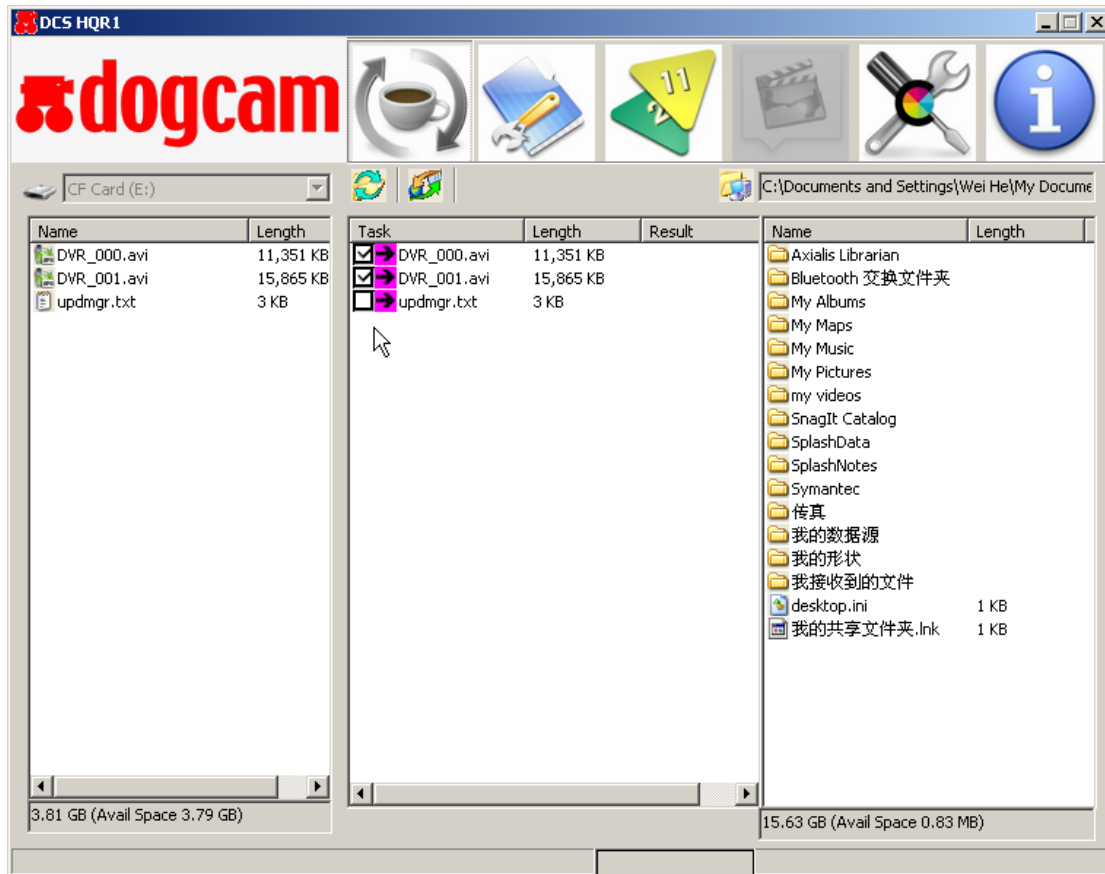


Click Sync button

to synchronize the recording video between CF card & PC.



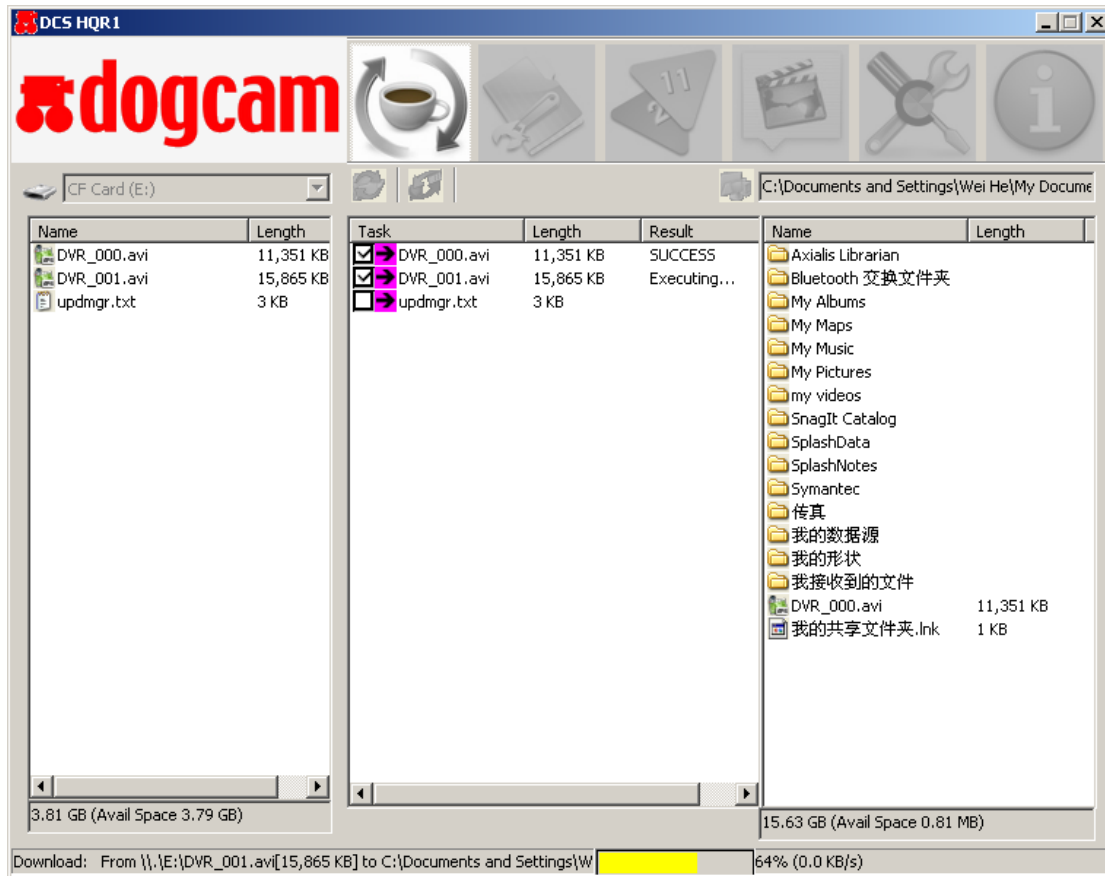
Please select files that you want to synchronize on task column.



After you select all the files that you want to synchronize, click Sync button



to start synchronization.

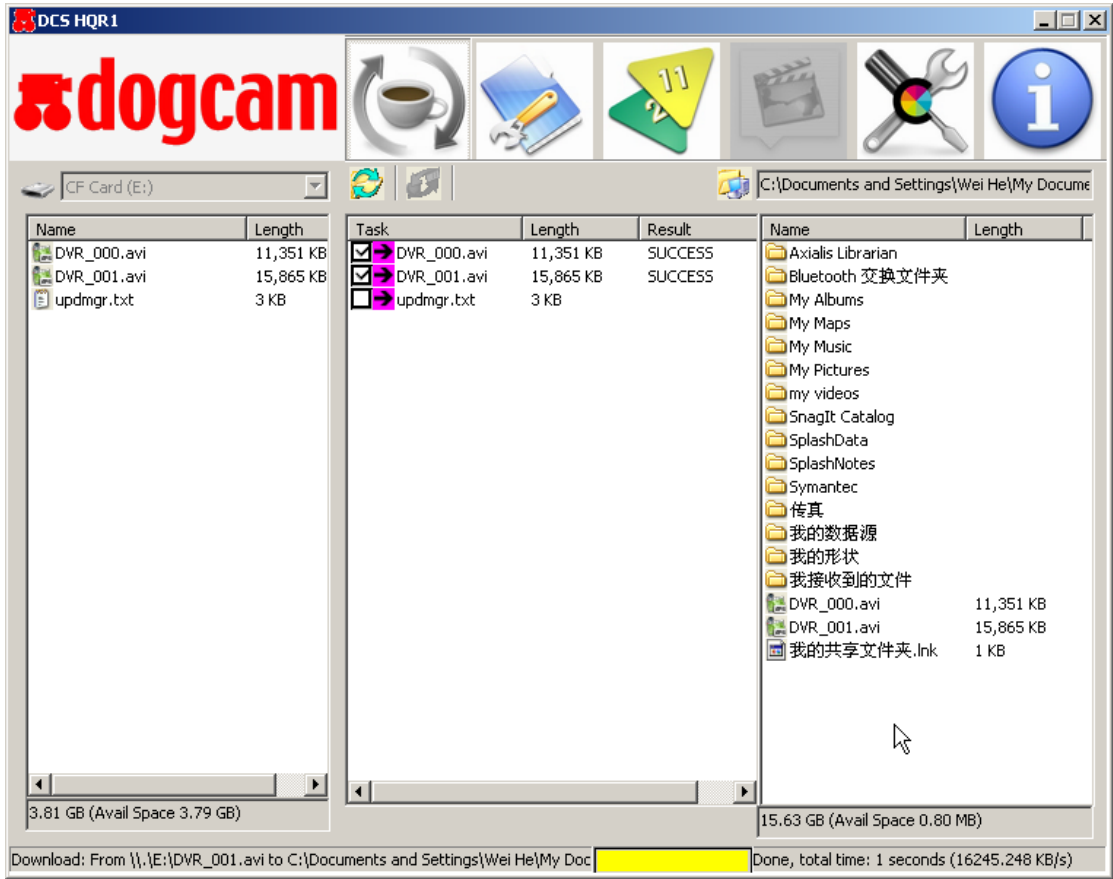



In task column, the result item will display status of files.

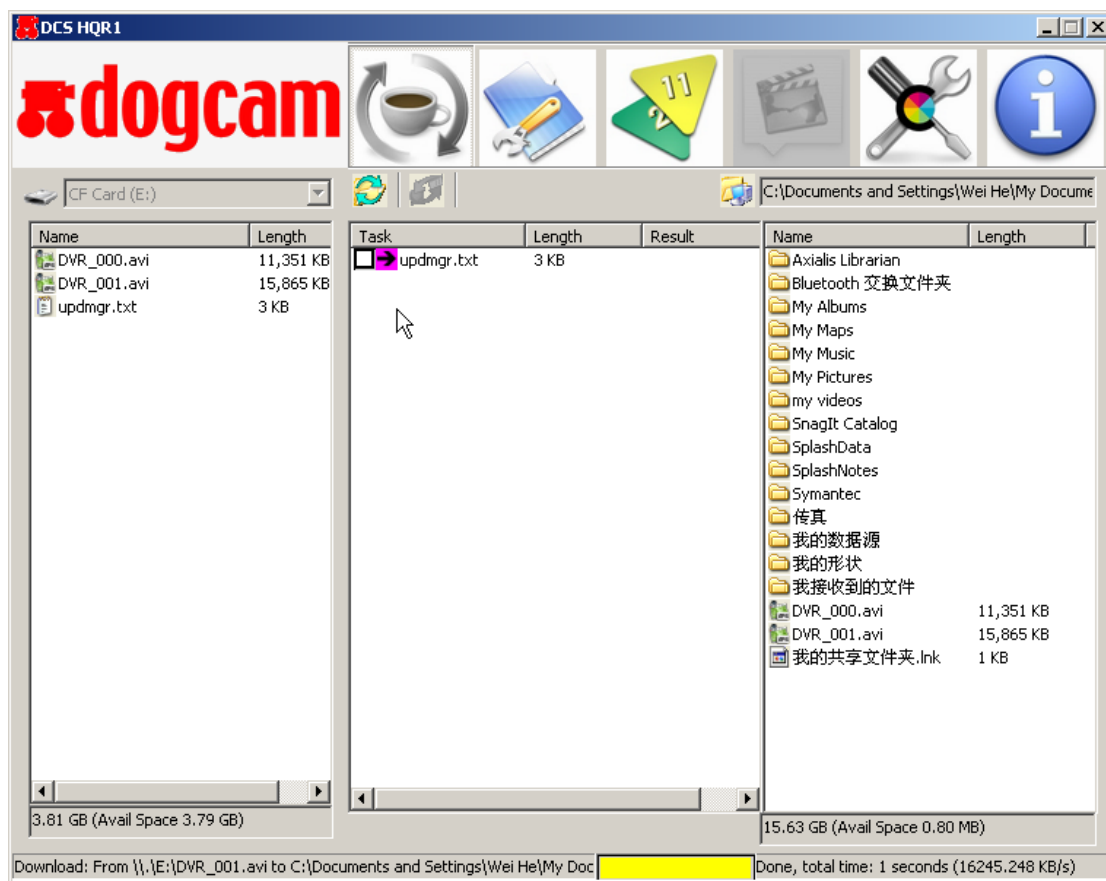
Executing... means the files are being synchronized, **SUCCESS** means the files have been synchronized successfully.


When a file is being synchronized, the yellow status bar will display on the button.

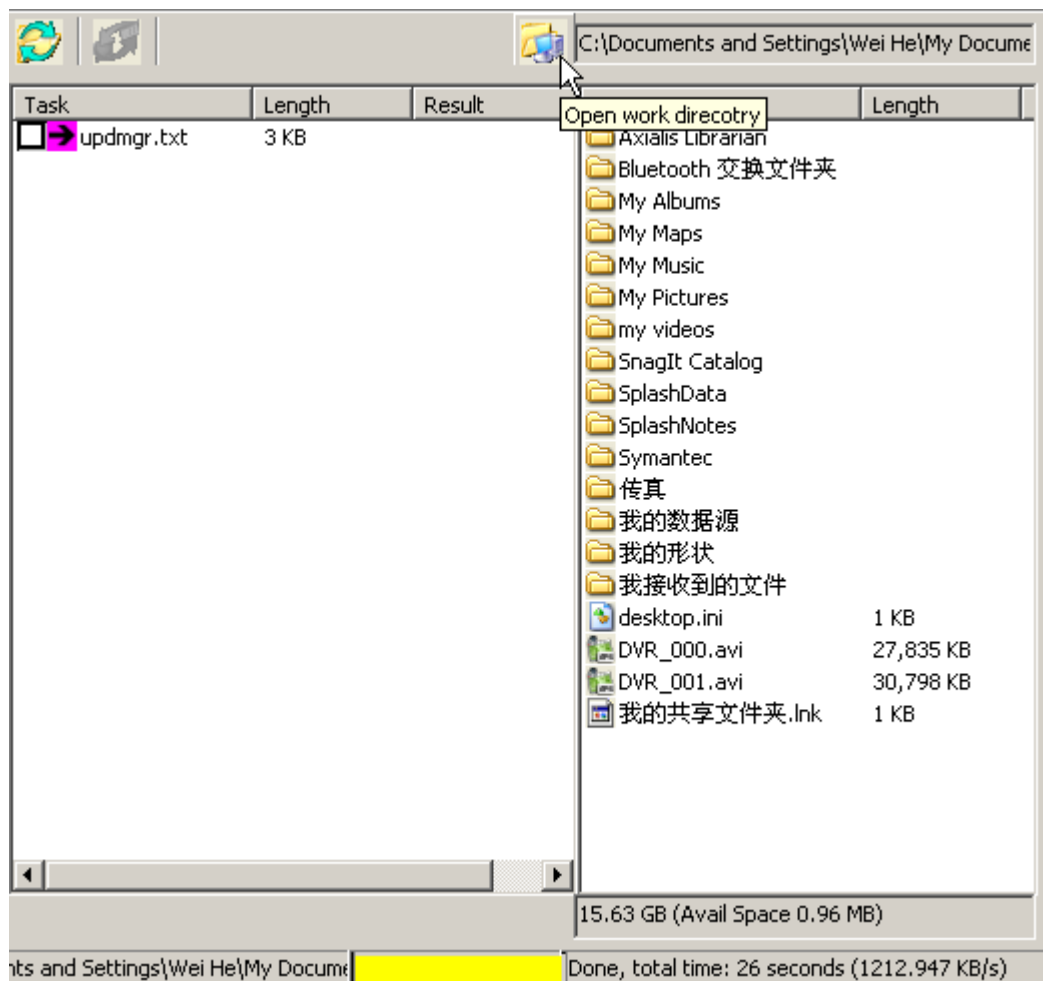
After all files are synchronized successfully, files will be synchronized to the folder on your PC, you will find these files on the working folder column.



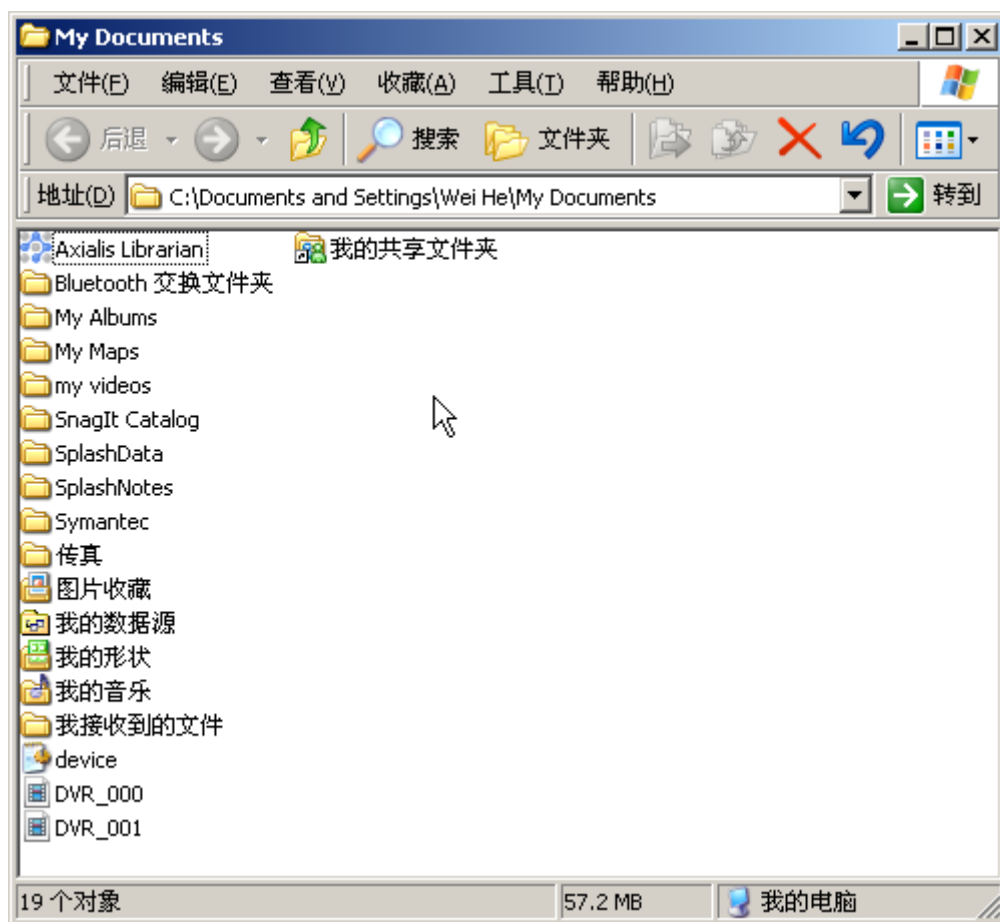
After synchronization, you can click the refresh button  to refurbish task column.



Click  to open working folder on PC.



In synchronization, the .csf MPEG-2 recording file will be converted to standard MPEG-2 video automatically.



MPEG-2 Converter



Click Conversion button

to render MPEG-2 recording video manually.

File Information

File Name:

File Length:

Estimate Replay Time:

Version:

First Frame Offset:

First Frame Number:

Last Frame Offset:

Last Frame Number:

Video Information

Format:

Framerate:

Resolution:

Bitrate:

Audio Information

Format:

Samplerate:

Channels:

SampleBits:


☐ Auto convert after select source file

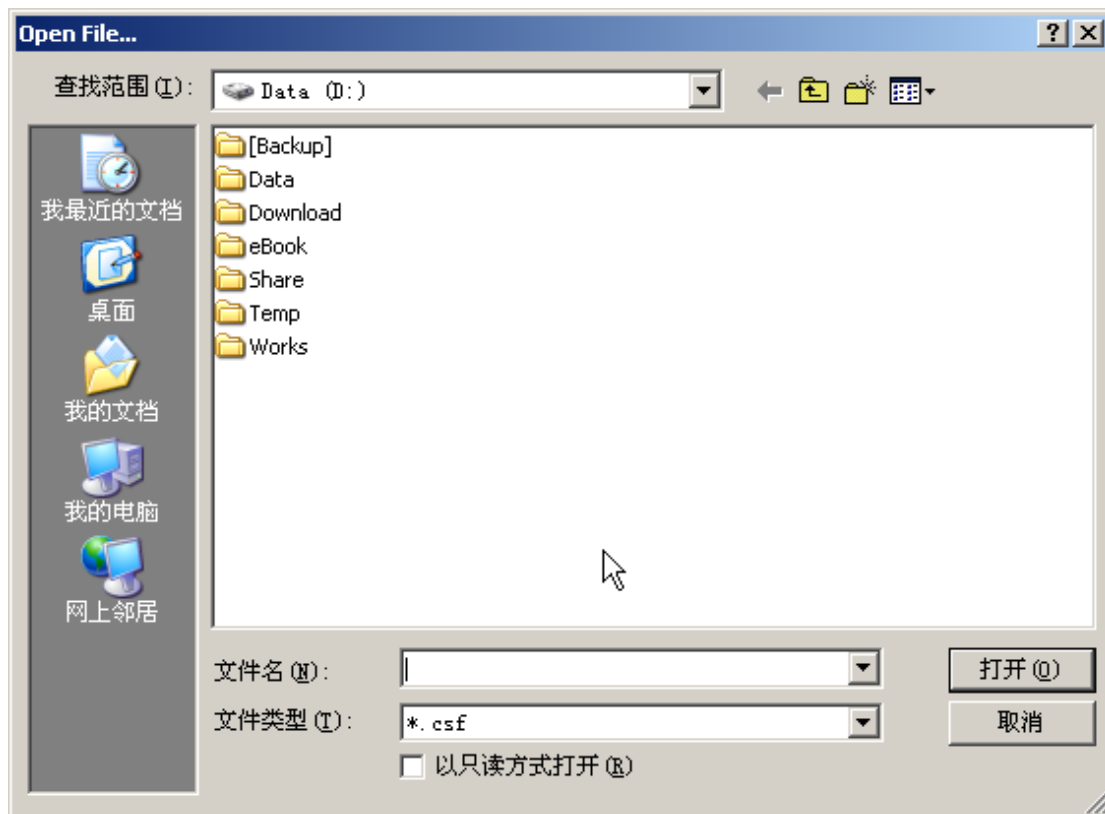
☐ Auto quit after conversion

Done, total time: 26 seconds (1212.947 KB/s)

Recorded MPEG-2 files have to be converted to standard MPEG-2 video for later video replay, edit & burn. The conversion of MPEG-4 is not required.

Sometimes, you copy many .csf MPEG-2 recording files to your PC, you then convert them manually.


Click  to open working folder on your PC so that you save .csf MPEG-2 files.



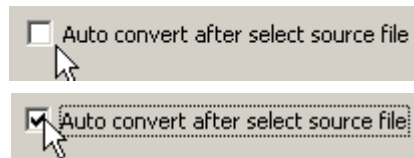
Then select the .csf file that you want to convert.

After you select the source file to convert, detailed information of the recorded MPEG-2 video will be displayed.

File Information		Video Information	
File Name:	<input type="text"/>	Format:	<input type="text"/>
File Length:	<input type="text"/>	Framerate:	<input type="text"/>
Estimate Replay Time:	<input type="text"/>	Resolution:	<input type="text"/>
		Bitrate:	<input type="text"/>
Version:	<input type="text"/>	Audio Information	
First Frame Offset:	<input type="text"/>	Format:	<input type="text"/>
First Frame Number:	<input type="text"/>	Samplerate:	<input type="text"/>
Last Frame Offset:	<input type="text"/>	Channels:	<input type="text"/>
Last Frame Number:	<input type="text"/>	SampleBits:	<input type="text"/>

Click  to convert the .csf file that you select.

The file can be converted automatically after you select the file if you enable automatically convert option.

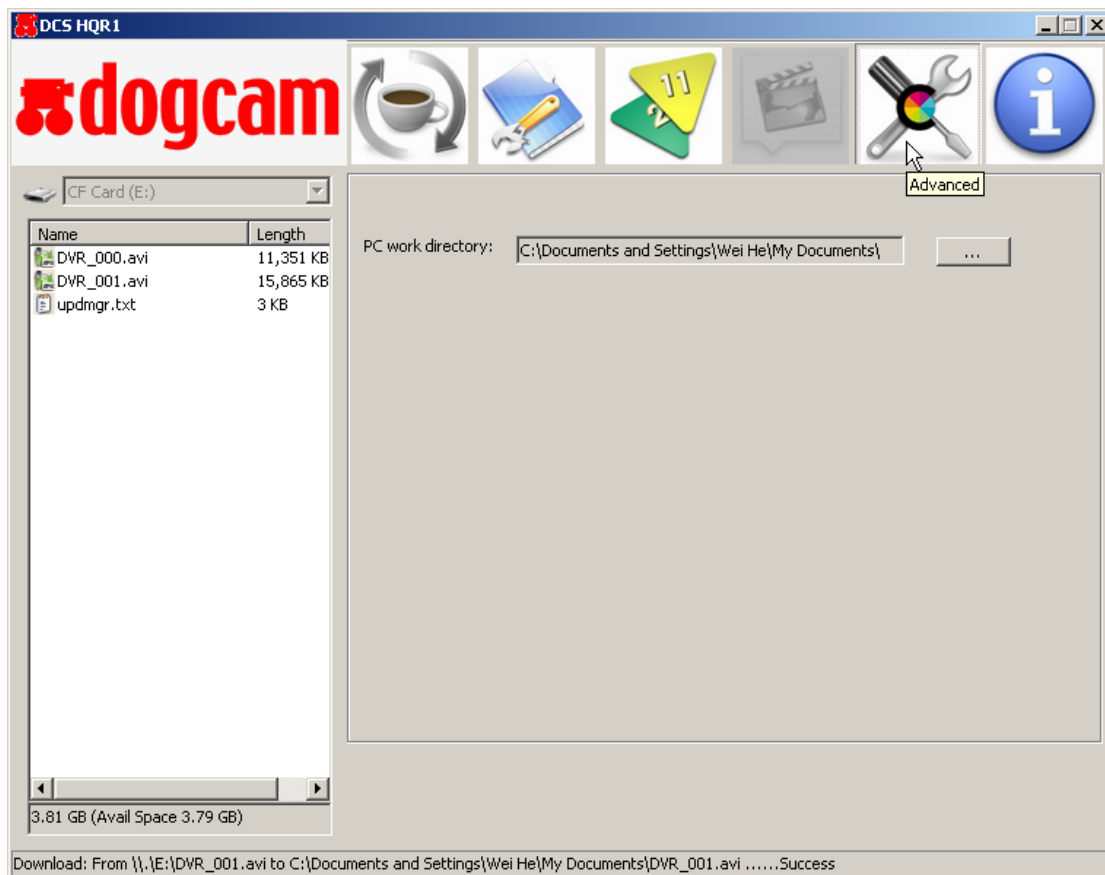


For better performance of conversion, it is recommended that the source file is on the CF card in a card reader and target file is on the hard disk.

Advanced Configuration



Click Advanced Configuration button to configure system environment.



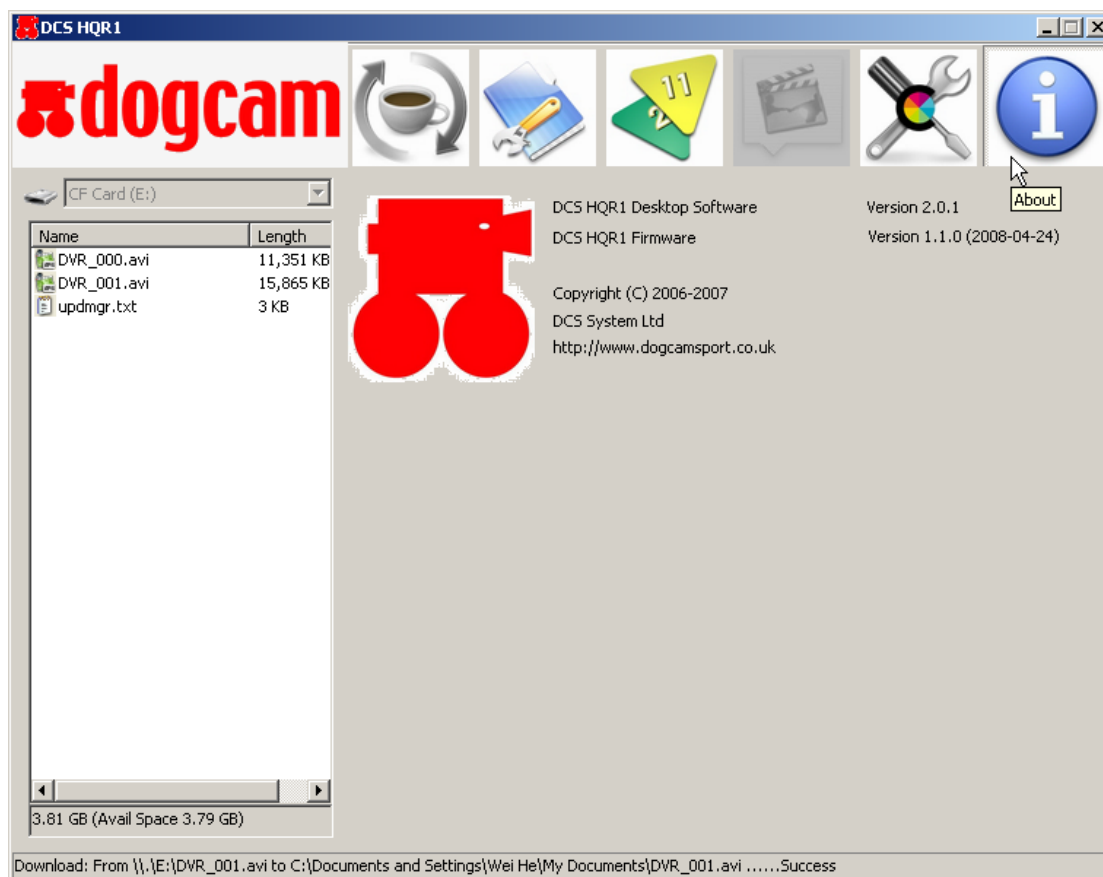
You can select working directory on PC to as synchronize folder.

About



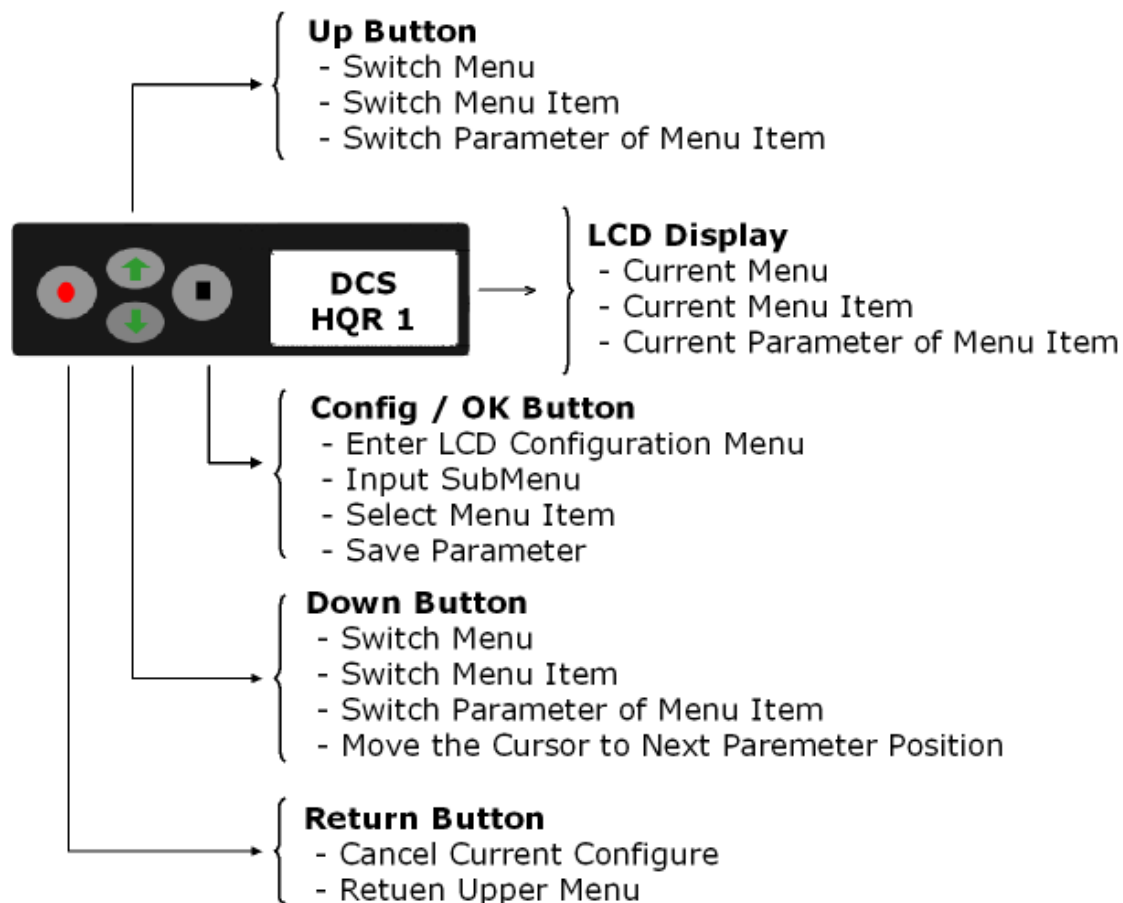
Click About button

to get the information details of your DCS HQR Desktop.




Configure DCS HQR1/HQR4 using LCD Menu

LCD Configuration Menu




Enter/Quit LCD Configuration Menu

Hold push button  for at least 3 seconds to enter LCD configuration menu, once you enter LCD configuration menu successfully, the LCD will display valid menu/menu item & parameter of these menu item depend on your DCS HQR1/HQR4 version.









After you finish configuring, press  to quit to upper menu.

You may need to press  one or two times depending on your position in the

menu.

Once you enter the LCD configuration menu, the system will wait for you to select & configure, if you don't press any buttons, the system will quit the LCD configuration menu after 10 seconds automatically.

Configure DCS HQR1/HQR4 in LCD Configuration Menu

Once you enter LCD configuration menu, you can switch menu using  &  buttons, then press  to select the menu/menu item which you want to configure, using   to select the parameter value & parameter area that you want to configure, then press  to save the configuration.

When you finish configuration, press  one or two times to quit the LCD configuration menu.


LCD Configuration Menu Details

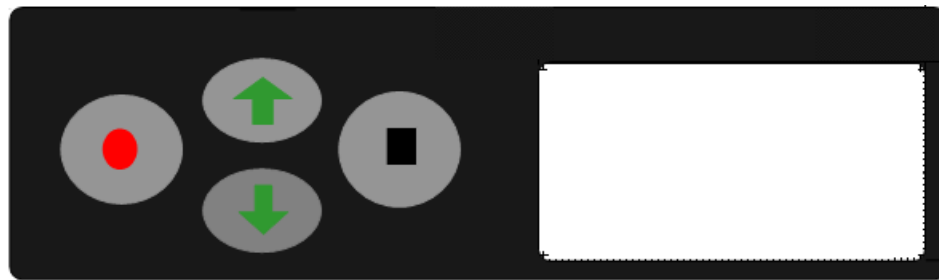
Menu

The valid menu of DCS HQR1/HQR4 is:

- **DATE**
- **INPUT**
- **VIDEO**
- **BEACON**
- **USERDES**
- **MISC**

In LCD configuration menu, Press  &  to navigate these menus.

Press  to quit configuration menu & return to ready status.



Menu Item & Parameter

DATE Menu



Menu	Menu Item	Parameter
DATE	DATE	• 07-04-02
	TIME	• 12:00:00
	STAMP	• Enable • Disable

1. Menu Item – Date











The parameter format is yy-mm-dd, please set correct date.

Use to select correct year, then press switch to month area, use select correct month, then press switch to day area, use select correct day, press will switch to year again, finish setting the correct date, press to save the current configuration, press quit to **DATE** menu.

2. Menu Item – Time







The parameter format is hour-minute-second, please set correct time.

Use  to select the correct hour, then press  switch to minute area, use  select correct minutes, then press  switch to second area, use  select correct second, press  will switch to hour again, finish setting the correct time, press  to save the current configuration, press  quit to **TIME** menu.

3. Menu Item – Stamp Status



Default status of stamp is **Disable**, please select proper stamp status to your requirement.

Press  &  to switch **Disable** & **Enable** status, then press  save current configuration, press  quit to **STAMP** menu.



INPUT Menu







Menu	Menu Item	Parameter
INPUT	VIDEO	<ul style="list-style-type: none"> • QUAD • PIP • PIP2 • H-Split • V-Split • PIP-2-B
	AUDIO	<ul style="list-style-type: none"> • Line In • Ext Mic • Int Mic

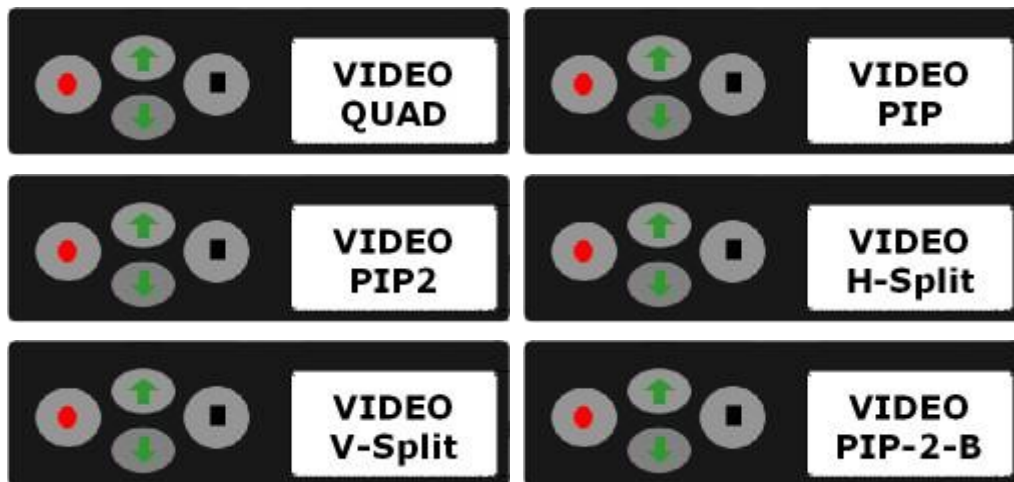
1. Menu Item – Video Input



You can configure the multi video input at the same time, this menu item is only for 4 Channel DCS HQR4.

Please consult 4 channel configuration chapters to get the details of this item.





Press  &  to switch video input configuration, then press  to save current configuration, press  to quit the **VIDEO** menu.



2. Menu Item – Audio Input



Default parameter is **Line In**, please select **Ext Mic** if you use external microphone input, or select **Int Mic** if you use internal microphone in the DCS HQR1/HQR4.

Press  &  to switch **Line In**, **Ext Mic** & **Int Mic** parameter, then press  to save the current configuration, press  quit the **AUDIO** menu.



VIDEO Menu







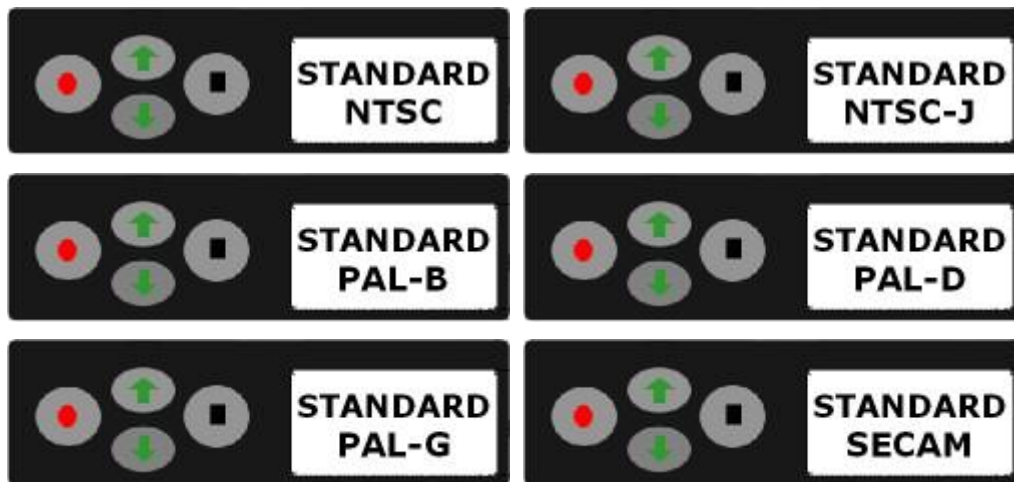
Menu	Menu Item	Parameter
VIDEO	STANDARD	<ul style="list-style-type: none"> • NTSC • NTSC-J • PAL-B • PAL-D • PAL-G • SECAM
	FORMAT	<ul style="list-style-type: none"> • MPEG-4 • MPEG-2
	QUALITY	<ul style="list-style-type: none"> • 1M • EP (2M) • LP (4M) • SP (6M) • HQ (8M)

1. Menu Item – Video Standard



Default parameter is **NTSC**, please select correct video standard depend on your video source.

Press  &  to switch the video standard parameter, then press  to save the current configuration, press  quit the **STANDARD** menu.



2. Menu Item – Video Format



Default parameter is **MPEG-4**, please select correct video format to suit.

Press & to switch **MPEG-4** & **MPEG-2** format, then press to save the current configuration, press quit the **FORMAT** menu.

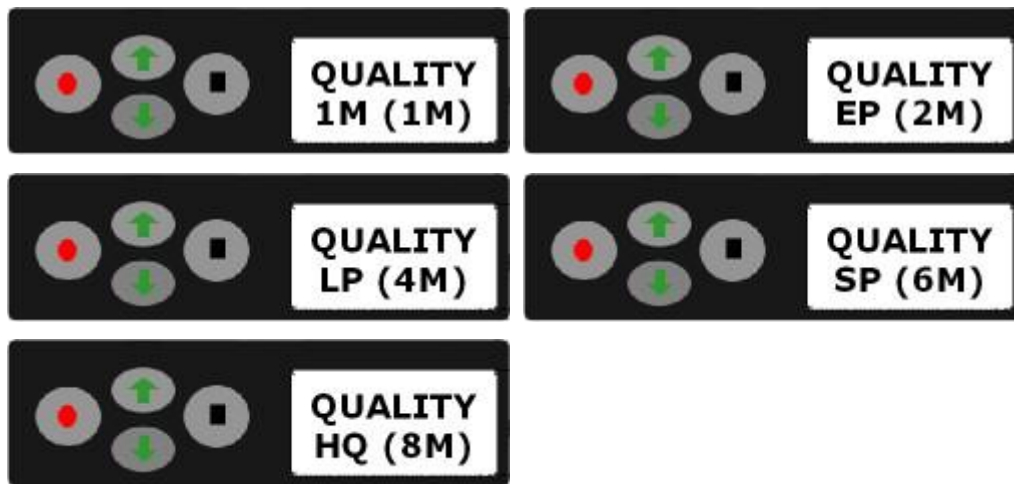


3. Menu Item – Video Quality



Default parameter is **EP (2M)**, please select proper video quality to suit.

Press & to switch **1M**, **EP (2M)**, **LP (4M)**, **SP (6M)** & **HQ (8M)** quality, then press to save current configuration, press quit the **QUALITY** menu.



BEACON Menu



Menu	Menu Item	Parameter
BEACON	BEACON	<ul style="list-style-type: none"> • Disable • Enable
	MASK	<ul style="list-style-type: none"> • 10 Sec

1. Menu Item – Beacon Status



Default status of the beacon is **Disable**, please select proper beacon status to suit.





Press & to switch **Disable** & **Enable** status, then press to save current configuration, press quit the **BEACON** menu.



2. Menu Item – Beacon Mask Delay



Default parameter of beacon mask delay is **10 Sec**, please select a proper delay time to suit.

Press  &  to select proper value of beacon mask delay, then press  to save current configuration, press  quit the **MASK** menu.





USERDES Menu



Menu	Menu Item	Parameter
USERDES	HOSTNAME	• HostName
	SCENE	• Scene
	GROUP	• Group
	CARRIER	• Carrier

1. Menu Item – Hostname







Default value of **HostName** is Hostname, use  select correct first letter, then press  switch to next letter area, until all letters are set, finish setting the correct hostname, press  to save current configuration, press  quit the **HostName** menu item.



2. Menu Item – Scene







Default value of **Scene** is Scene, use  select correct first letter, then press  switch to next letter area, until all letters are set, finish setting the correct scene, press  to save current configuration, press  quit the **Scene** menu item.



3. Menu Item – Group







Default value of **Group** is Group, use  select correct first letter, then press  switch to next letter area, until all letters are set, finish setting the correct group, press  to save current configuration, press  quit the **Group** menu item.

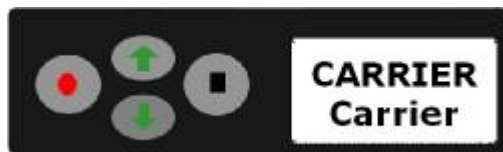


4. Menu Item – Carrier



Default value of **Carrier** is Carrier, use  select correct first letter, then press  switch to next letter area, until all letters are set, finish setting the correct carrier, press  to save current configuration, press  quit the **Carrier**

menu item.



MISC Menu





Menu	Menu Item	Parameter
MISC	CFGITEM	• Profile Items
	LFPREFI	• DVR_
	SYSCLOC	• Yes • No


1. Menu Item – Profile Item



When you are in this menu, you can change current profile item between all profile items that you have configured.

Use  &  to switch current profile item.



Finish selecting, press  to save current configuration, the DCS HQR1/HQR4 will reboot automatically to enable current profile item.



2. Menu Item – File Prefix



Default value of file prefix is **DVR_**, you can change it to suit your requirements.

Use to select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct hostname, press to save current configuration, press to quit the **Lfprefi** menu item.



3. Menu Item – SysCloc



The system clock of the DCS HQR1/HQR4 needs to be calibrated for accurate time recording, it is important for the Lap Timer. The default value is **No**, if you need to calibrate the system clock, use select **Yes**, then press to start calibrating.



After you select **Yes** to start calibrating, the DCS HQR1/HQR4 will restart.



The system clock will be calibrated on reboot.



After the system clock of DCS HQR1/HQR4 is calibrated successfully, the DCS HQR1/HQR4 will restart again.




LCD Configuration Menu Structure

Menu	Menu Item	Parameter
INPUT	VIDEO	<ul style="list-style-type: none"> - QUAD - PIP - PIP2 - H-Split - V-Split - PIP-2-B
	AUDIO	<ul style="list-style-type: none"> - Line In - Ext Mic - Int Mic
VIDEO	STANDARD	<ul style="list-style-type: none"> - NTSC - NTSC-J - PAL-B - PAL-D - PAL-G - SECAM
	FORMAT	<ul style="list-style-type: none"> - MPEG-2 - MPEG-4
	QUALITY	<ul style="list-style-type: none"> - 1M (1M) - EP (2M) - LP (4M) - SP (6M) - HQ (8M)
DATE	DATE	07-03-20
	TIME	12:00:00
	STAMP	<ul style="list-style-type: none"> - Enable - Disable
BEACON	BEACON	<ul style="list-style-type: none"> - Enable - Disable
	MASK TIME	10 sec
USERDES	HOSTNAME	HostName

	SCENE	Scene
	GROUP	Group
	CARRIER	Carrier
MISC	CFGITEM	Profile Items
	LFPREFI	DVR_
	SYSCLOC	- Yes - No

Firmware Upgrade

The firmware of the DCS HQR1/HQR4 can be upgraded if necessary. The DCS HQR1/HQR4 will check the core image file on CF card whilst powering up. If image & OSD file is found then the firmware of the DCS HQR1/HQR4 will be upgraded automatically. Please follow below instructions to upgrade.

- 1) Format CF card in FAT32 file system.
- 2) Copy imgc.2510.img and osd.img to the root of CF card.
- 3) Use **DCS HQR Desktop**  to generate DEVICE.INI depended on your needs. DEVICE.INI must be under the root of CF card while upgrading.
- 4) Power off and then insert CF card into DCS HQR1/HQR4.
- 5) Turn on the power of DCS HQR1/HQR4.
- 6) The firmware will be upgraded after power on. The LED turns to red, then yellow and alternately flashes red and yellow several times. It takes about two minutes to upgrade.

At the same time, LCD will display schedule of upgrade process if you upgrade from Firmware V1.0.4 or newer.



When the DCS HQR1/HQR4 upgrades successfully, it will reboot automatically.



*** DON'T TURN OFF POWER DURING THIS PERIOD!!**

- 7) The DCS HQR1/HQR4 will be rebooted automatically after upgrade. The LED will change to red, yellow and then green. It takes about 12 seconds to reboot.
- 8) Over if the LED is green. A Beep will sound one time once, the DCS HQR1/HQR4 upgrades successfully.

**** To Upgrade 4 Channel DCS HQR4, after reboot successfully, you must power off & power on 4 Channel DCS HQR4 manually.***

The file, updmgr.txt, will be found under the root of CF card. The phrase of following can be found in the content of updmgr.txt.

kernel image: image.2510.img[Sun Oct 15 03:33:24 2006] == (Mon Apr 2 03:33:24 2007)

The date and time correspond to the version of firmware. Upgrade is successful if the date and time is the same as the data and time kernel generated.

**** Power supply has to be guaranteed normal while upgrading. DCS HQR1/HQR4 can not be restored if upgrade fail.***

**** Wait at least 4-5 minutes till reboot successful. LED keeps constant green if reboot successful.***

FAQ

- 1) LED yellow flash
CF card is full. Change CF.
- 2) LED is red
Failure or battery is low. Use the AC power adapter or external battery pack.
- 3) Charging period
It takes 5-8 hours to charge a fully discharged battery. The charge indicator LED will go out once fully charged.
- 4) File is not accessible or DCS HQR1/HQR4 can't startup
File system is wrong. This can happen after abnormal power off and long time usages of CF card. Format CF card in FAT32 file system.

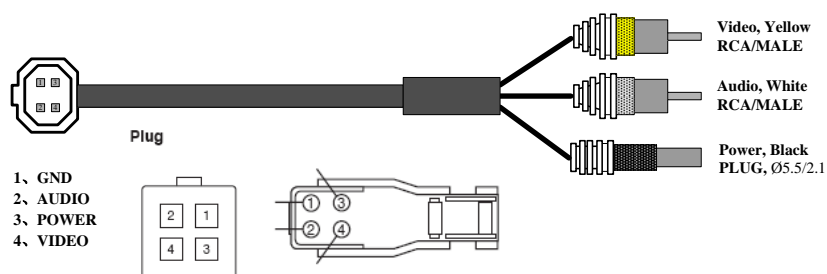
Appendix

IRIS Interface on Board

- 1- GND
- 2- Audio In
- 3- Power Output (Limited load for camera)
- 4- Video In

The number is corresponding to the pin number of IRIS connector.

IRIS Cable



Revision

05/10/2008, Version 2.0.1

- Improve Desktop Start-Up
- Fix Bug

04/28/2008, Version 2.0.0

- Using Synchronize technology
- Change GUI
- Improve adjustable position support of Lap Timer
- Adjust options arrange
- Add Record Key Frame option for surveillance application
- Change some default configuration
- Change configuration file to DEVICE.INI

03/10/2008, Version 1.1.2

- Add Multi-Configuration Item
- Add Split Beacon support
- Add adjustable position support of Lap Timer
- Add new arrange method of PIP
- Add Record Key Frame option for surveillance application
- Improve upgrade process
- Improve MPEG-2 conversion code
- Change configuration file name to DEVICE.INI

10/18/07, Version 1.1.1

- Add 1M(CIF/SIF) Bitrates Encode Option
- Add 8M Bitrates Encode Option
- Add Single recording video file Cycle Record Mode
- Add Full Disk (CF Card) Cycle Record Mode
- Add Analog Menu Output for 4 Channel DCS HQR4
- Replace OSD library for 1 Channel DCS HQR1, Support black border of OSD font
- Improve large CF card support

09/24/07, Version 1.1.0

- Improve 4-Channel DCS HQR4 support
- Improve large CF card support
- Add Power-Off Timer function
- Add Cycle Record function
- Add customized LCD Display
- Add System Clock Calibrate function
- Decrease the time of starting

06/08/07

- Add on 4-Channel DCS HQR4 support
- Optimize LANC Remote Control support

05/08/07

- Optimize LANC Remote Control support
- Add new version IR Remote Control support
- Optimize Record on Power On function
- Add Beep/Vibration Enable/Disable option
- Add Time Stamp in two format & disable option
- Optimize Beacon support
- Optimize DCS HQR1 Desktop GUI
- Fix some bug
- Release DCS HQR1 Desktop V1.0.5 Final version
- Release Firmware V1.0.5 Image upgrade file Final version
- Release Official User's Manual V1.0.5.1

04/28/07

- Add more version LANC Remote Control support
- Add Auto Record on Boot function
- Add Beep Enable/Disable option
- Optimize Beacon support
- Release DCS HQR1 Configuration File Generator V1.0.5
- Release Firmware V1.0.5 Image upgrade file
- Release Official User's Manual V1.0.5

04/02/07

- Add LCD support
- Add DCS HQR1/HQR4 status display on LCD
- Add configuration menu based on LCD
- Release DCS HQR1 Configuration File Generator V1.0.4
- Release Firmware V1.0.4 Image upgrade file
- Release Official User's Manual V1.0.4

02/13/07

- Add osd.img into firmware upgrade
- Release DCS HQR1 Configuration File Generator V1.0.3
- Release Firmware Image upgrade file

10/01/06

- Initial Release